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CLINICAL MEDICINE AND SURGERY

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CLINICAL MEDICINE AND SURGERY

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VOL. 42 AUGUST, 1935 NO. 8

EDITORIAL

William Gilbert

Father of Electricity

WHEN most people think of the beginnings of our knowledge of electricity, the names of Faraday, Galvani, Volta, and perhaps others of about their time, are apt to come to mind most readily, while the man who actually began to find out some real facts about this tremendously potent agency and gave it the name we now use, is rarely remembered.

William Gilbert, the remarkable son of a clerk of archives, was born in Colchester, England, in 1540, and received his formal education at St. Johns College, Cambridge University, taking degrees as Bachelor and Master of Arts and Doctor of Medicine by the time he was twenty-nine years old.

Although his fame rests almost solely upon his scientific researches, Dr. Gilbert was a highly successful practicing clinician in London — so much so, in fact, that he was appointed court physician to Queen Elizabeth and kept the appointment with James I after the death of the "Virgin Queen." He also held several important offices in the Royal College of Physicians and was elected president of that dignified and ancient organization in the year 1600—the very year that his epoch-making work, *De Magnete,* which ranks in the same class with Newton's *Principia,* was published in London.

Up to the time of Gilbert, even the well educated people and scientists believed that the behavior of the compass needle was due to influences from the stars; and sailors clung to the superstition that the power of a magnet could be destroyed by rubbing it with garlic.

Gilbert set out to study the magnetic force with a small magnetic needle balanced on a pivot. In the course of these experiments, he discovered magnetic induction and conductivity and a number of other interesting and important things about lodestones, which led him to the sound and true conclusion that the compass needle points to the north, not because of any stellar attraction, but because the earth is an immense, spherical magnet. His vivid and constructive imagination pictured a field of magnetic force surrounding the earth—and Faraday verified this as a fact two centuries later.

It had been known from antique times that amber, if rubbed with a dry cloth, would attract very light particles of all kinds and leave these particles unchanged. Gilbert discovered that various other substances—glass, sulphur, resin and some crystals — possess this same property, which he, first of all men, named "electricity," from the Greek word for amber, *elektron;* and he devised a primitive electroscope for detecting such discharges. He also discovered that only certain metals were attracted by a magnet, and that when so attracted they acquired magnetic properties.

The experiments and discoveries of Gilbert,

who was not only the *first*, but also one of the most successful investigators in the field of magnetism and electricity, were of absolutely fundamental significance and formed the basis for the work of all his contemporaries and successors along this line. It was a world calamity when his collection of books and instruments, which he had left to the Royal College of Physicians, was destroyed in the great London fire of 1666.

This successful clinical practitioner and illuminated researcher among the secrets of nature, who should be much more widely known and honored than he is, fell a victim to the plague in 1603; but thoughtful and discerning people will realize the justice and force of Dryden's understanding when he declared, "Gilbert shall live till lodestones cease to draw."

With what we do not know of the laws of the universe, the world might be constructed.—FARADAY.

Facts on Birth Control

NOW that the American Medical Association has finally awakened to the fact that birth control is a real and important problem, and recognized its responsibility in regard to studying its various phases and making some sort of report regarding the reliability of the various methods which have been proposed for accomplishing it, it behooves all physicians to familiarize themselves with the biologic and medical aspects of contraception, so that they can form a sound idea of how straightforwardly this tardily appointed committee performs its functions.

Although the manufacturers of contraceptive preparations and devices may be perfectly sincere in the claims they make for their products—and may be perfectly right—their statements cannot be accepted as unbiased evidence, because they have a stake in the issue. In any case, the only way to gain a clear and rational outlook on what anyone says, is to be fully acquainted with the anatomic, physiologic, biologic and psychologic facts on which the various claims are based.

A year ago last January, a Conference on Birth Control and National Recovery was held in Washington, D. C., at which a group of people, well informed, not only upon contraceptive methods, but also upon all the varied matters underlying the whole question of birth control, got together and said their say, as scientists, not as propagandists. None of them had any financial interest in the outcome of that conference one way or another; and anyway, they were not trying to prove or disprove any particular thing, but merely to exchange ideas, so that all would be wiser and better informed.

The papers and discussions presented at that conference have been embodied in a sightly little paper-bound book entitled "Biologic and Medical Aspects of Contraception," edited by Margaret Sanger. In it will be found well-reasoned considerations of the economic, sociologic, endocrine, psychic and other factors which enter the picture, and authoritative opinions upon the relative reliability and applicability of the various chemical, mechanical, biologic and physiologic contraceptive methods now being presented to the medical profession and the public, including the socalled "safe period" and immunization of a woman against spermatozoa. It is a book by and for scientific thinkers, who really want to know how the question stands today, in the minds of unprejudiced students and research workers, so that they can listen to and read the things which are now being said and written along these lines with informed intelligence, and take action accordingly.

In order that this valuable piece of truly educational literature may not be denied to any interested physician who desires to procure and to study it (and it is well worth studying!), the people who are responsible for its publication will send it, on request and without charge, to any physician who will ask for it, directing his request to The National Committee on Federal Legislation for Birth Control, Inc., 1343 H St., N. W., Washington, D. C. The sooner this request is made, the better.

Narrow minds think nothing right that is above their own capacity.—LA ROCHEFOUCAULD.

The Farm and Industry

UP to very recent years, the chief function of the farmer in our social life has been to provide food for men and beasts, with the secondary activity of furnishing the raw material for clothing in the form of cotton, wool and leather.

Under the present social set-up, in which the standard of production in all lines is based, not upon the needs of our people, but upon their ability to acquire a sufficient amount of that fictitious and readily controlled and manipulated pseudo-commodity,

called money, to supply their needs, the economic status of the farmer has compared rather unfavorably with that of the men who are engaged in industry and commerce.

But the time now seems to have arrived when the farmer is to have a wider field for his activities, by reason of the fact that the rapid exhaustion of our "natural" resources—the mines, the forests and the oil wells—has set the chemical researchers to work hunting for means whereby our supplies of necessary materials can be produced by human effort, rather than by the vastly leisurely processes of unassisted nature.

In May, 1935, a Conference of Agriculture, Industry and Science was held at Dearborn, Michigan, which may prove to have been one of the most epochal gatherings in our history. At this Conference, its 300 members signed a Declaration of Dependence Upon the Soil.

Among a considerable number of industrial outlets and uses for farm products may be mentioned: the production of alcohol from corn, for furnishing power (the alcohol-burning engine is already a reality, and most present automobile engines can burn mixtures of alcohol and gasoline containing not more than twenty-five percent of the former fuel); the utilization of the by-products of the making of alcohol from corn (protein-rich feed and carbon dioxide), so that a bushel of corn, so utilized, will be worth 95 cents, including the value of the alcohol; the raising of Jerusalem artichokes for the production of power alcohol; the production of tung oil for making varnishes and lacquers; the making of durable and workable lumber from cornstalks, straw and the refuse of sugar mills; the growth of soy beans, not only for various types of food, but for the making of plastics to compete with bakelite and similar substances; and a number of other matters.

To some, this will seem a strange subject to develop in a medical magazine, but the fact of the matter is that tens of thousands of physicians in this country are, directly or indirectly, dependent for their livings upon the prosperity of the farmers, and so anything which will increase the income of the farmers will bring a more satisfactory financial return to those who minister to their health and welfare.

Interested physicians can obtain copies of the Proceedings of this Dearborn Conference by writing to The Chemical Foundation, Inc., 645 Madison Ave., New York City. After the doctor has read it, he can make another good friend by passing it on to some practical farmer.

In any case, those sufficiently interested to spend $2.00 for a copy of "The Farm Chemurgic," by William J. Hale (reviewed in the May, 1935, "C. M. & S.," page 261), or to write to the Chemical Foundation for a free, paper-bound copy, can gain more detailed information along these lines and win even deeper, friendly feeling, among their farmer patients and friends, by giving or loaning it.

Nature knows no pause in progress and development, and attaches her curse on all inaction.—GOETHE.

The Detail Man

THERE are, of course, a great many ways in which medical men can be classified; but one of these divisions might be as between those who feel that their professional education was finished when they received their diplomas and rather resent the idea that anyone — especially any layman — can tell them anything worth while, and those who, as the clever seventeenth-century Spanish priest, Baltasar Gracian, expressed it in his delightful "Oraculo Manual," are "peculiarly smart, because they learn without effort and much from many, being taught by all."

A doctor of the former class rarely or never attends society meetings or postgraduate courses, for fear someone will be so presumptuous as to suggest the possession of some knowledge, the acquirement of which might make him a better physician. If a detail man from some high-class pharmaceutical house should make such a suggestion, the poor fellow would probably be chucked out on his ear.

Those of the latter group have their eyes, their ears and their minds wide open all the time. They "stop, look and listen" to all and sundry who might have something to say that could be of value to them. They may hear and read a good deal of nonsense, but if, out of a bushel of such, they can winnow a handful of useful clinical suggestions, the result is worth the effort. Remember that Withering learned about digitalis from an old woman who made "yarb teas."

When a capable physician takes a course in laboratory technic or physical therapy procedures or the fitting of spectacles or any other special line of work, there is a good chance that the man who teaches him these things, even though he is a Doctor of Medicine, may know a good deal less about the

general practice of that profession than he, the student, does. But that makes no difference to such a man. He realizes that his teacher knows more about *one thing* than he does, and that one thing is just what he is eager to learn.

The average high-grade detail man from a house making medicines or instruments or physical therapy apparatus, is a well-trained specialist on one or two or three drugs or pieces of apparatus, and although he may not be a physician (though a good many of them are), he knows a good deal more about the particular thing he is presenting than the average doctor does, and the medical man who refuses to listen to him just because he has no professional degree, is missing an opportunity to acquire valuable instruction for nothing.

Of course, a good clinician with a large and active practice cannot spend a great deal of time with every detail man that comes along, but a reasonable amount of experience will teach him which are the men who will be likely to have something worth while to tell him, and if he is wise he will take time to listen to them.

The better class of purveyors to the medical profession are now spending a great deal of money and effort in training competent and intelligent detail men, and the clever physician can, with a very moderate expenditure of time, acquire the equivalent of several highly instructive postgraduate courses by listening to what these men have to say, and then sifting the information thus obtained through the seive of his experience and judgment, to determine how much of it he can profitably use.

NEXT MONTH

Dr. Iwan I. Ostromislensky, of New York City, will describe the treatment of alcoholism on an entirely new basis, considering it as a manifestation of allergy.

Dr. Herbert J. Rinkel, of Kansas City, Mo., will explain how to give the coseasonal (immediate) treatment of hay fever.

Dr. George B. Lake will present his report of the great A. M. A. and C. M. A. meeting at Atlantic City, N. J.

COMING SOON

"Primary Ovarian Carcinoma Presenting Pulmonary Symptoms," by Herbert J. Simon, A.B., M.D., New York City.

"Cooperative Shamanism," by Flora Warren Seymour, A.B., LL.M., Chicago.

Concentrated Instruction

WHEN a physician embarks upon the ordinary course of postgraduate study, he spends some time and care in a consideration of the programs offered by various institutions and of the men who will give the instruction, for these latter are the truly important factors in his choice.

As no school has more than half a dozen or so outstanding teachers, the student must choose among these; and as they are busy men at home, he must plan to spend several weeks in getting the information he wants and needs.

But imagine what an opportunity is offered when a hundred or so nationally famous teachers, from a score of great institutions of medical instruction, are gathered together for a week, with no other purpose but to impart theoretic and practical knowledge to thousands of eager and enthusiastic physicians, who have come from all parts of the country to receive their instruction. Here one can, in a few days, come in contact with a group of great scientists and clinicians who could not otherwise be met except during a period of months, and then at relatively enormous expense for travel.

Think, too, of the inspiration which comes from meeting scores or hundreds of other sincere and forward-looking members of one's profession and exchanging ideas with them.

This is a straightforward and unexaggerated word picture of a meeting of the Interstate Postgraduate Medical Association — the biggest five days of concentrated, high-grade medical instruction available anywhere.

The next meeting will be held in the centrally-located city of Detroit, October 14 to 18, 1935. Every physician who appreciates a bargain and feels that he needs to have his mental batteries recharged should make a sincere and determined effort to be there.

LEADING ARTICLES

The Injection Treatment of Hernia

By Karl E. Kretzschmar, M.D., Los Angeles, Calif.

TREATMENT of hernia by the injection method has been known for more than a century, but in recent years has fallen into such disrepute that most physicians of standing decline even to discuss the merits of the method. One has not far to seek for the reason for this attitude. Unfortunately the injection method has been practiced chiefly by advertising quacks who lacked fundamental knowledge of anatomy and pathology. It is of the utmost importance to the public that the treatment of hernia be intrusted to qualified physicians exclusively.

A doctor with the best interest of his patient at heart should not permit his judgment to be warped by the circumstance that a method has been exploited by charlatans. He is bound to investigate, if not to adopt, any method of treatment which will serve as a satisfactory alternative in cases where the radical operation is contraindicated or for any reason impracticable.

As though to add to the confusion and misunderstanding, Goldhahn[1] published results of treatment by socalled hernia specialists which he had occasion to observe. Two of the cases were treated notwithstanding irreducibility, resulting in fecal fistula, and a third ended in death from sepsis following injection. Such atrocities call for no comment, surely. Reputable physicians, reporting their experience with ambulant treatment of hernia in the literature in the past eight years, have placed injection treatment on a scientific basis.

The objections against the method do not hold true. It is feared that the injection may be made into the abdominal cavity, involving the omentum, bowels and vessels. With reasonable care, such a thing is impossible. The place of injection is designated by the location of Poupart's ligament and the external ring. About the depth of the injection, one has to be governed by the thickness of the abdominal wall. *It is absolutely necessary to be thoroughly familiar with the anatomy of the inguinal region.*

Another objection is the pain which sometimes develops on account of the irritating nature of the different types of injection fluid. It is never severe and usually occurs the day following the treatment. Exceptionally sensitive persons may have to lay off from work for one or two days. Hot water applications on the inguinal region alleviate the discomfort promptly.

It has to be remembered that "the principal cause of indirect inguinal hernia is the preformed congenital sac. The processus vaginalis left behind in the descent of the testicles to the scrotum forms the sac of the hernia." Under normal conditions the processus vaginalis is obliterated shortly after birth, before hernia develops. *Nature closes the sac by adhesions and fibrosis,* and this is just what we want to accomplish by the injection method when a hernia has developed.

Whilst in indirect inguinal hernia the contents pass through the inguinal canal in their descent and are ultimately located in the scrotum, the anatomic conditions of the direct inguinal hernia are entirely different. Here the hernia is the result of a defect through the posterior wall of the inguinal canal, medial to the inferior epigastric artery, in the space designated as Hesselbach's triangle.

The Truss

The choice of a truss which really fits is of the greatest importance. The indirect inguinal hernia enters the aperture in the fascia transversalis sac, the internal inguinal ring which is destined for the passage of the spermatic cord. It may appear only as a protrusion near the internal inguinal ring, or it may, as is usually the case, pass through the whole inguinal canal, descending into the scrotum.

The professional truss fitter invariably fits the truss so that the pressure is applied on the *external* inguinal opening and it just succeeds in holding the viscera back. Should, however, the abdominal pressure increase, the viscera slip past and the whole appliance is of no use. If a truss is properly fitted and the pressure is directed against the *internal* inguinal opening, it seldom happens that the hernia contents pass by.

It is generally acknowledged that the spring truss is the one which fits the patient's need the best, although there are cases in which other kinds of trusses may be used to better advantage.

It is not advisable to leave the fitting of the truss to the professional truss fitter. The phy-

sician should control the truss repeatedly, especially making sure that the pad retains the hernia at the internal ring.

Before starting the injection treatment, the truss should be worn for at least one week, to ascertain that it feels comfortable and can be worn for the whole length of the treatment without being removed. In the beginning, the patient usually complains bitterly of the discomfort during the night. This difficulty can be considerably improved if the truss is properly padded with felt, paying special attention to the pubic bone.

The main object of the injection treatment of hernia is to bring about an active sero-plastic lymph exudation, with the ultimate formation of *adhesions*. The surgeon, when operating within the abdominal cavity, carefully avoids any trauma, in order to prevent such adhesions, as the abdominal tissue is especially prone to react with sero-plastic lymph exudation.

In the injection treatment of hernia, just this exudation is desired. The sequelae are the formation of extensive adhesions, which gradually obliterate the inguinal canal and narrow or close the opening. In the case of direct inguinal hernia, where the injection has to be made into the tissue of the transversalis fascia above Hesselbach's triangle, these adhesions serve to strengthen the tissues of the abdominal wall to such a degree that the wall can withstand the pressure from within. In the course of time, these adhesions form a solid connective tissue wall, which does not become absorbed and which has resistance enough to prevent the viscera from protruding.

The great advantage of the injection method over the operation method consists in the fact that the treatment is ambulant and that the patient is able to go to work, provided he avoids heavy lifting. All the disadvantages which may follow an operation, and which need not be mentioned here, are eliminated. There is no hospital bill to be met—a big item under the present prevailing economic conditions.

It is absolutely essential in treating hernia by injections that a spring truss, which prevents the hernial contents from descending, be worn day and night during the treatment. If a patient, after proper examination, refuses to cooperate, one had better not start the treatment, as a failure is practically certain.

Solutions Used

There are several solutions recommended for the injection treatment. The solution of Pina-Mestre[2] is to be had on the open market. It is said to consist of extract of catechu, monesia, crameria, rosa canina and vaccinum myrtillis, in "physiologic serum." Injections are to be made twice a week, each time 2 to 5 cc., preceded by an injection of 2 cc. of novocain solution. If the treatment has to be hurried, daily treatments of smaller amounts may be given without bad effects.

The advantage of the Pina-Mestre solution is that it is non-toxic and non-caustic, thereby eliminating the dangers that occasionally arise in using the more caustic solutions. The Pina-Mestre solution is also given in larger doses and at more frequent intervals, thus obtaining a faster and more uniform reaction. Bratrud[3] reports that he has found this solution to be the safest and most efficient.

Ignatz Mayer[4] advises as his formula:

Zinc sulphate	1 dr.	3.9 Gm.
Phenol crystals	6 dr.	23.3 Gm.
Glycerin	4 fl. dr.	15.0 cc.
Aq. Cinnamomi	1 fl. oz.	30.0 cc.
Fluid extract pinus canadensis (dark)	5 fl. dr.	18.5 cc.
Chemically pure redistilled water, sterilized	2 fl. oz.	59.2 cc.

Dissolve the zinc sulphate in the cinnamon water; liquefy the phenol by heating; add the glycerin; shake thoroughly until mixed and cooled, then add the distilled water and, finally, the fluid extract of pinus canadensis; shake thoroughly; allow the fluid to stand for about one week, agitating the mixture several times a day; filter. Before injecting, boil the solution.

For adults, inject 8 to 16 minims (0.5 to 1.0 cc.), at intervals of 4 to 7 days; for children, 2 to 4 minims (0.12 to 0.24 cc.).

McKinney[5] advises the bi-weekly injection of 2 to 8 drops of a solution of Lloyd's specific tincture of thuja, 1.0 cc.; alcohol, 1.0 cc.; phenol, 2.0 cc.

Rice prefers: oil of thuja, 1.0 cc.; alcohol, 1.0 cc.; phenol, 2.0 cc. Not more than 10 minims to be injected at weekly intervals.

When giving the first injection of Mayer's or the thuja and phenol solution, give only one or two drops of the solution, as occasionally a patient is found having an idiosyncrasy to phenol, and gangrene and sloughs will result if the ordinary dose of 8 minims is given.

The technic of the treatment varies with the different types of hernia. The indirect hernia responds most quickly and gives the best results.

Technic: Inguinal Hernia

One prepares the site of the injection according to antiseptic rules, after placing the patient in a recumbent position with the pelvis elevated to a 45-degree angle.

The palpating finger, placed by invagination of the scrotum into the external canal, has once more to make sure that no viscera are protruding into the canal. If all is free, the place of injection is decided upon. It is either the internal or the external ring. For the beginner, the external opening is safer to choose. The injection in this case is made

about ½ inch proximal to the tip of the finger, placed in the external opening, after the skin is painted with tincture of iodine at the site of the needle prick.

The needle has to penetrate skin, subcutaneous tissue, fascia and external oblique muscle to reach the inguinal canal. If a large (21-gage), short-bevel needle is used, the structures can be felt as they are penetrated. With the tip of the finger in the external opening, we are able to control the depth of the injection and can make sure that the needle does not pass the posterior wall of the inguinal canal.

Due to the proximity of blood vessels, one has to withdraw the plunger of the syringe before making the injection, to ascertain that the lumen of the needle is not placed in a blood vessel.

The injection of the fluid has to be done *very, very slowly*, in order to avoid the pain which invariably will occur if the pressure forces the injection fluid into too large an area. Three to four minutes is the least amount of time the injection should consume.

It is advisable, at first, to inject an infinitesimal amount of fluid, and to wait for a half-minute, to observe the patient's reaction. If he does not complain of any unusual sensation, the injection may be continued.

After the injection is completed, the needle has to be withdrawn, two fingers of the operator pressing together the tissues through which the needle has to pass. This saves the patient the pain which occurs when some of the injection fluid follows the receding needle. It is well to note in one's record the length of the needle used, for reference in the following injections, as the injections higher up in the inguinal canal cannot be controlled any more by the tip of the finger and the whole success of the treatment depends entirely on the proper placement of the injections. Small adhesive tape markers designate the place of each injection.

After the injection, the patient is placed in a horizontal position and kept there for 10 or 15 minutes. He is especially *instructed not to try to sit up without having the truss adjusted.* This is very important, as the strain in using the abdominal muscles in getting up may upset the result of weeks of treatment.

The second injection is placed 1 inch towards the internal ring. To inject in the right place, one has to locate the internal ring first. For this purpose one draws, with tincture of iodine, a line connecting the anterior superior iliac spine with the tuberculum pubis. The internal opening can be palpated by the experienced operator approximately in the middle of the line, about 1 cm. above.

The third injection has to be made still nearer to the internal opening. By now the whole length of the inguinal canal can easily be palpated as a hard cord. The internal ring can be felt plainly and there are no difficulties in making the next two injections closely into the internal ring. The following injections have to be placed along the inguinal canal, with special consideration of the external ring.

The number of injections necessary to complete the eradication of the hernia varies greatly. It is not so much the size of the hernia that counts, as the amount of reaction that can be produced. It is easily understood that a feeble, old man, or a patient with lowered vitality, will need a greater number of injections than a healthy young person. On an average, about 8 to 10 injections suffice to obliterate an indirect inguinal hernia of medium size.

It is a great mistake on the part of the operator to be satisfied with the result obtained by the first series of injections. It is a good rule to order the patient back every 1 to 2 months, for control, for a whole year. It may be advisable, during this period, to give a few more injections.

After completing the first series of injections, one finds no signs of the previous hernia. Where there was soft, protruding tissue, there is now a hard, indurated mass.

In order to produce a surplus of tissue to offset the absorption and resorption which takes place later on, it is advantageous to give 1 or 2 injections more, even if one is convinced that the results already obtained would prove satisfactory.

Some authors prefer the site of the internal ring for the first injection. There is no doubt that, in some cases, this leads to a shorter duration of treatment, but it is not always possible, even with a great deal of experience, especially in fat persons, to palpate the internal ring exactly and the location of the internal ring by drawing a line towards the anterior superior iliac spine gives only an approximate idea of the location of the internal opening.

After the last injection, the patient has to wear the truss still for about 2 months, day and night. Should the examination then prove satisfactory, the patient is permitted to take off the truss during the night, *with instructions to put the truss on whilst in a recumbent position, before arising.*

After one or two more months, the patient is usually given permission to discard the truss. If, at any time, further injections are necessary, the same stringent conditions concerning the wearing of the truss prevail.

If we have to deal with a direct inguinal hernia, the procedure is entirely different, due to the anatomic conditions. Here it must be our task to strengthen the tissue of the abdominal wall by a layer of adhesions, so that the integument does not give way to abdominal pressure. The injections have to be made into the tissue of the transversalis

fascia above Hesselbach's triangle. This means that the needle does not have to be inserted so deeply as in a case of indirect inguinal hernia.

Owing to tenderness and irritation, it is sometimes necessary to stop the injections for one or two weeks. These are the cases in which it occasionally happens that the aspirating plunger fills the syringe with a thick white fluid. This is the seroplastic exudation of the tissues, which later on aids in forming the much needed adhesions.

Femoral Hernia

In the treatment of femoral hernia, special caution is necessary, due to the proximity of the large vessels. The anatomy of this area has to be kept in mind, realizing that the artery is lateral to the femoral vein and that the femoral vein lies medially and posteriorly to the hernia sac. The main condition before treating this kind of hernia is to examine the patient thoroughly and locate the artery and the vein with the external femoral opening. In very obese patients this is sometimes difficult. Under no circumstances should the operator begin the treatment before the anatomic conditions are quite clear to him.

In order to prevent any chance that the needle may injure the femoral vein, one has to place the left hand on the vein, pressing it aside and directing the needle over the tip of the finger into the tissue around the femoral opening. As a matter of fact, only a few injections are necessary to obliterate and close the opening.

At the beginning of the treatment, one has to be very careful that not for a moment does the viscus pass the external opening. This is liable to occur when the operator examines the patient, as he, naturally, wants to know the result of the previous injections. On an average, after the third treatment, the amount of plastic tissue formed is sufficient to close the external opening.

The treatment can be carried through as an office procedure, with few exceptions. As an illustration, the following case may be reported:

Case Report

A man, 72 years old, was suffering from complete hernia for over 30 years. The hernia was down in the scrotum and the size of a small child's head. It was reducible; the external opening was the size of a 50-cent piece. All trials to keep the hernia back by a truss were in vain. The abdominal pressure through the large opening, in coughing, was so enormous that even an extremely strong spring truss could not prevent the viscera from passing. The patient was in misery.

The only safe way to treat the patient was to keep him in bed with the pelvis elevated, the back of a chair serving this purpose well. He had to wear the truss all the time and was not permitted to get up for any purpose. Daily injections of the Pina-Mestre solution, for five days, with careful control that no viscera by any chance had slipped outside, closed the external opening to such an extent that the truss could hold the hernia back and further injections could be given in the office. The subsequent ambulant treatment produced a complete cure.

General Suggestions

Patients usually stress the necessity of remaining at work during the treatment. Should, however, the truss not hold back the hernia satisfactorily, a week-end must be sacrificed to rest in bed. Even where there is no doubt as to the efficiency of the truss, the commencement of the treatment should be with a few days of complete rest. It certainly increases the ratio of cures considerably and shortens the duration of the treatment.

As a matter of routine, at the beginning of the treatment, it is advisable to inform the patient that certain incidents may arise. The first and foremost is the swelling of the testicle and the scrotum of the treated side. This happens in about 8 to 10 percent of the cases. The swelling and pain are very moderate and recede after 4 or 5 days. Up to this time, no case is known where any detrimental effect to the testicles has occurred, and the observation covers a period of many years.

Another incident is pain shooting into the glans penis a few minutes after the injections. One patient, with a double inguinal hernia, felt this sensation every time, no matter which side and at which place the injection was made. The pain was rather severe for about 5 to 10 minutes, but disappeared entirely after 15 minutes.

After having received 3 or 4 injections, some patients call the doctor's attention to the fact that the hernia is "out" again, pointing to a lump partly extending into the scrotum. In this circumstance we have to do with the hernial sac, which is obliterated and often filled with a serous liquid. Experience shows that this lump gradually becomes smaller and smaller until it disappears entirely after the lapse of several months.

Before starting the injection, the patient is asked to inform the operator when he feels any pain. As long as there is only a local burning sensation at the place of the injection, there is no reason for not continuing. It is different, however, if the patient points to the middle of the abdomen or to the scrotum. In either case, the injection should be discontinued at once, as otherwise the pain will become very annoying and perhaps make the patient decide to stop the treatment. Should severe pain develop for a few hours, it can easily be controlled by a few tablets of Pyramidon (amidopyrene). Pain which comes after using an injection of the specific tincture of thuja does not start before 2 to 3 days and lasts, on an average, half a day.

This pain is of quite a different nature and hardly ever needs the administration of a drug. The pain is usually in relation to the degree of reaction, and the stronger the reaction the better the results.

Abdominal Hernia

The majority of cases of abdominal hernia react very well to the injection treatment, especially the umbilical type. Certain types of postoperative ventral hernias also can be treated successfully.

One of my patients had a protruding hernia the size of a large orange. The opening was located in the linea alba above the pubic bone and was over 2 inches in diameter. He had undergone a prostatectomy, with resulting incontinence of urine. After 25 injections, alternating between the Pina-Mestre solution and specific tincture of thuja, the opening was filled with an indurated mass and the hernia closed. The treatment lasted six months.

It is very important to go slowly in these ventral cases, in order to give nature time to form the adhesions which close the defect in the abdominal wall. At each session, two injections, opposite to one another, have to be made into the edge of the wall surrounding the opening, beginning at the narrowest point.

In treating these types of hernia, much depends upon the kind of truss that is worn. The truss fitter is instructed to have the abdominal belt fitted rather tightly. A drawing, with the exact measurements of the opening, is made and a special pad constructed to fit into this opening. This pad is loose and not attached to the abdominal belt.

In recumbent position the pad is pressed into the opening and the abdominal belt so adjusted that it does not permit the pad, even at maximal pressure, to leave the opening. This is of paramount importance in most postoperative hernias and it is evident that the lack of this precaution is partly responsible for poor results which are reported.

In 140 cases, with an observation time of over 1 year, there were only 3 recurrences, which appeared after the truss had been discarded for a considerable period of time. All three cases were cured by additional injections. The reason for the recurrences was the lifting of heavy loads without truss protection.

It is understandable that the artificial tissue will never be able to withstand excessive strain. One cannot expect the impossible, and the patient should be told that, after the treatment is finished, he has to use reasonable care to avoid straining the abdominal muscles.

Virtually the only contraindication for the use of the injection treatment of hernia is irreducibility of the hernial contents.

If one has to deal with a patient suffering from hemophilia, naturally it is not advisable to use the injection method, as it may happen that the needle pierces a blood vessel which, under normal conditions, would have no ill effects.

Advanced constitutional diseases may be contraindicational, although it is left to the discretion of the physician whether or not the patient is in a condition to stand the treatment.

Conclusions

The injection treatment of hernia is without danger, in the hands of a careful operator.

The percentage of lasting cures is as high as, if not higher than by the operation method.

The cost of treatment to the patient and his loss of time are much less than the cost of operation.

In case of recurrence, a few injections is all that is necessary; while, otherwise, it would mean another operation.

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KEEP ON TRYING

People may criticise you for your acts and condemn you for your socalled "preaching," and not "practicing what you preach."

You may be blameworthy and often subjected to severe criticism for not fulfilling your precepts, but you are, at the same time, justified in making this explanation (not justification of your inconsistency), that you are trying to correct your faults.

If you are conscientiously comparing your present life, that you are now living, with your acts of the past, and can find improvement, you are on the right road, even if you do stub your toe occasionally.

People may condemn you, and you probably condemn yourself, but if you are in earnest and want to do the right thing, why worry over the critics? Just keep on being human and continue in your efforts to improve.
—James Sanford Bulletin.

Why Goiter Recurs

By Emilian O. Houda, M.D., Tacoma, Wash.

THE chief reason for recurrence of goiter, particularly after surgical removal and recognized after-treatment, lies in the fact that the primary cause of the condition remains active in those parts of the gland that are left in the neck, as they must be to allow

Fig. 1.—Patient just before (left) and shortly after her third thyroid operation.

regeneration of the gland and retention of thyroid functions.

The active cause, in the first instance, as well as of recurrence in every instance, is not so obscure as it is generally considered to be. Through immediately factual procedures, the active cause, as necessarily present in every goiter, is cultivated from every type. Constantly demonstrable microbes, with the varying manners in which thyroid tissue reacts to the diffusible toxins which they create in the gland, determine, not only both of these conditions, but maintain the continuity of the whole story of thyroid enlargements, even carried into the last chapter regarding malignant goiter. Goiter is thus brought under the general category of diseases that are of microorganic origin.

The pictures of a young woman (Fig. 1) were taken just before and shortly after the third removal of a goiter. The picture of four ampules (Fig. 2) was taken after they had been aseptically opened and closed a number of times, as is necessary in the cultivation of microbes from the contained tissues. Originally these ampules were ordinary test tubes, as shown at the right with specimens from another goiter, into which removed tissue was placed during the first minute of removal and with the least possible amount of handling and air exposure, and from which goiter microbes were cultivated.

The series of photomicrographs (Figs. 3 and 4) was made from slides made from the serum obtained from the tissue ampules: (1) from freshly-removed tissue; (2, 3 and 4) after 24, 48 and 72 hours of incubation, respectively; the last (5) was made from a mature culture on agar. Except for variations in the appearance of the organisms, like pictures may be duplicated from any consecutive run of removed goiters.

The first photomicrograph (Fig. 3) shows a large mass of agglutinated microbes, which, to the uninitiated, is not readily identified as of bacterial composition. This is a common observation in this district. When agglutinated clumps are not present, the microscope reveals the organisms present in single and combined forms; the second shows a beginning breaking up of the clumps, after twenty-four hours of incubation; the third shows a

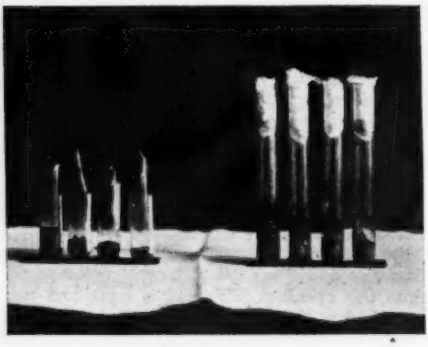

Fig. 2.—Ampules for the cultivation of the organisms causing goiter.

well-advanced dispersion of a clump, after 48 hours of incubation; the fourth (Fig. 4) shows a complete dispersion, after 72 hours of incubation, when no clumps are observable.

Particular attention is given to the clumps, for nothing short of a deliberate attempt to contaminate the tissue, and then by organisms in pure culture that might be known to agglutinate when coming in contact with goitrous tissue, can one consider such clumps as possible contaminators. However, the technical steps involved with a prompt glass-sealing of the ampules are of such a nature that the question of contamination is not only under ideal control, but narrowed down to an irreducible minimum. Whatever question might remain, on the score of contamination in particular, must be settled through bacteriologic procedures, and not through other related arts or sciences.

By the demonstration of microbes in the incubated tissue, as well as on slides made of the serum obtained from freshly-removed tis-

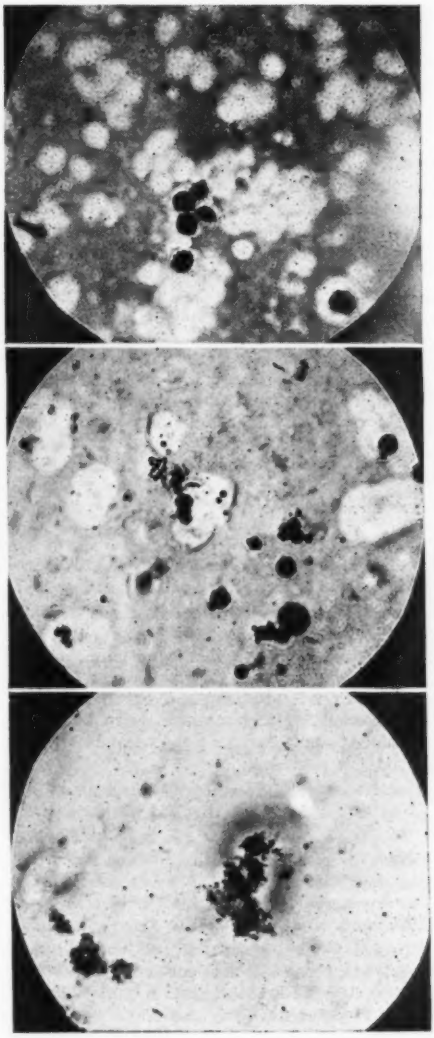

Fig. 3.—Photomicrographs of organisms causing goiter: *Top*, from freshly-removed tissue; *middle*, after 24 hours of incubation; *bottom*, after 48 hours of incubation.

sue, the factor is considered definitely settled. Their primary relationship to the condition, of course, must be established through other related procedures. That relationship is confirmed when the organisms subscribe to Koch's postulates in full. Not only are the organisms present in every case, cultivated from every clinical type, and the inoculation of rabbits is followed by thyroid disease, but vaccine prepared from the organisms has proved itself more effective in the treatment of goiter than other agents thus far used.

Thus is told, in brief summary, the most essential part of the story of goiter in every instance. Except for variations in the form in which the organisms appear in different cases, a consecutive run of any number of goiter cases will show the same factors present. I have made a study of more than 3,000 specimens, over a period of ten years, and the convictions expressed have been weighed from many angles; they are firmly fixed; yet I remain open to a better explanation of the disease, should it be found.

The patient under particular discussion was post-operatively immunized with vaccine prepared of the cultures obtained from the removed tissue; and judging from an extensive personal experience, as well as by reports in hand from physicians who have used the vaccine in many parts of the United States, she is given a positive assurance that another

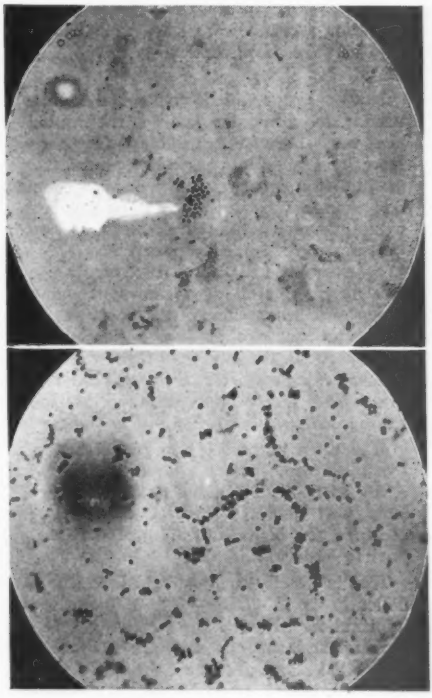

Fig. 4.—*Top*, organisms causing goiter, after 72 hours of incubation; *Below*, mature culture of the organisms, on agar.

operation for goiter will never be necessary. Such assurance, of course, is predicated on the short period of time in which anti-goiter vaccine has been used, for ten years is too short a time to pass judgment on convictions that are otherwise fixed.

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Sex Questions Answered*

Part IV

By G. P. Lawrence, M.E., M.D., Westerville, Ohio

Birth Control

39.—Shall we go to a physician for personal information on birth control before marriage? If so, should the couple go together?

Yes. If you are so situated as to need birth control information, by all means get it from a physician who is qualified to prescribe the best methods for each individual case. Most physicians would probably wish to interview both husband and wife, either together or separately. If much detailed information on marital technic is given, it is best given separately.

40.—Does the postponement of having children for several years after marriage necessarily injure the health of either the husband or wife?

Not if *proper* birth control methods are used. Many popular but improper methods are very harmful, especially to the wife. Abortions are not only extremely dangerous, but frequently cause permanent damage, and sometimes sterility. Coitus interruptus usually wrecks the wife's nervous system, in time (see 37). Condoms interfere with proper sensations, often frustrate the woman's orgasm, and cause nervous irritation (see answer 33) and fear of their breaking. Douches are applied too late, require getting out in the cold at a time when repose is most essential, irritate the vaginal mucous membrane, and prepare the soil for leukorrheal infection.

41.—When you take into consideration the troubles people get into because they cannot afford to marry early and have children, why wouldn't it be better for them to marry young and practice birth control until they can afford to have children?

That is exactly the best solution! The main difficulty is in getting proper birth control information. It will be necessary to repeal national and state laws before such information will become freely disseminated (see answer 35).

42.—If a husband is sterile, must the couple adopt children, or would it be all right for the wife to have them by some one else? What if it were the wife that was sterile?

Many novels and plays have been written around this theme. Public opinion is against any extra-marital solution. The answer depends upon the attitude of the couple and of their medical advisor. We must remember that one of the best tests of the propriety of a proposed action is whether it will bring happiness to all concerned.

This couple should ask their family physician to refer them to a specialist on sterility. There are a few medical men scattered over the country, who, through extensive experience, have developed splendid ability in this field.

Many causes of sterility, especially in women, can be corrected. A very careful study, of both husband and wife, should be made before the condition is pronounced hopeless. Occasionally, artificial insemination; i. e., injection of the husband's or another man's semen into the uterus, with a syringe, is successful[7].

Determination of Sex

43.—Is there any way to regulate intercourse so as to control the sex of the offspring?

No. Many ideas have been advanced along this line, and our recent study shows that sex is determined by whether a certain chromosome is long or short, but no one, so far, has discovered how to lengthen or shorten the chromosome. Many methods have been advocated, usually for the purpose of lining the proposer's pockets.

Embryology and Developmental Anomalies: "Marking the Baby"

44.—Does the state of the mother's mind during pregnancy have any effect upon the unborn child? If the mother has sorrow during this period, will the child be of a sorrowful nature or disposition?

Probably not, except that a person who worries and frets a great deal usually, thereby, interferes with good digestion and elimination. A child born of an unhealthy parent is less strong than one born of a robust, placid mother. Emotional characteristics undoubtedly are *not* transferred to the *unborn* child; but, with equal certainty, they are impressed upon the *new-born* child whom a nervous mother shortly trains to be fretful and exacting, or placid and well behaved, according to her example.

45.—What is the cause of babies being born with defects like harelip, cleft palate, extra fingers, spina bifida, etc.? Are any of these due to heredity? Do they occur because the parents have done something they should not have done?

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*This is the last of four parts, and concludes the article.

7.—This is the answer given to the lay inquirer. This question will be discussed from the physician's viewpoint in a subsequent article.

They are merely a freak, vagary or incompleteness of development. Most of them are due to incomplete closure of an opening. Extra fingers are due to excessive splitting of rudimentary structures. None are hereditary to any extent, although there is a possibility that they might be more common with subnormal or diseased parents. There is no proof that anything the parents do or omit to do, outside of furnishing proper nutrition, has any bearing on the development of the child.

Genital Abnormalities and Operations

46.—Is circumcision necessary for all boys? If so, at what age is it best done? Are there not some cases where it is needed and others where it is not?

No, to the first question; yes, to the last. It depends upon the size of the opening in the foreskin. If this is too small to allow easy retraction over the glans, circumcision should be done. About two-thirds of baby boys should be circumsized. The biblical age of one week is about the best time.

Pregnancy and Pre-Natal Care

47.—How long is it before a woman can tell that she has conceived or is pregnant? What are the first signs of pregnancy?

That depends upon the woman and her experience. An occasional woman can recognize an unusually effective orgasm, and readily prove her contentions by delivering a baby 280 days thereafter. The missing of the next menstruation, a full feeling in the genitalia, enlargement and tenderness of the breasts, and morning nausea are the first symptoms usually noticed.

48.—Is it harmful to the mother and fetus to have sexual intercourse during pregnancy? If not, how often should it occur?

Usually not. Most couples follow their regular habits, and I see no reason to change them if a woman is healthy in every way. I have a feeling that the male secretion is of value during pregnancy, as it undoubtedly is at other times (see answer 18). Some women abort easily, and intercourse should be interdicted for them. As to frequency, follow the general rule, as often as both feel the desire and experience a feeling of benefit and well-being as a result—not often enough to tire or exhaust either husband or wife.

Labor and Delivery; Abortions

49.—If a woman has had a miscarriage, is she capable of producing normal children? Is she if she has had an abortion (criminal abortion)?

Syphilis is a frequent cause of dead or defective children. The treatment is well known to the medical profession, but the patient seldom perseveres until cured.

Abortions (miscarriages), whether criminal or not, often leave an infected or diseased condition of the uterine lining. Occasionally, this is severe enough to result in abortion of future pregnancies. If the uterus has been properly cleaned out and sterilized, at the time, there should be no difficulty with future pregnancies and, of course, the children would be normal.

50.—Which makes the better mother, a girl of 19 or a woman of 35? What is the ideal age for motherhood?

Obstetrically speaking, the younger the better—within limits, of course. The girl of 19 usually has a very easy time at delivery, if her pelvis is normal. From a mental and spiritual standpoint, a somewhat older mother will have better judgment and will bring up her children more sensibly. Some people are too old to be sympathetic with, and understanding of, the child's viewpoint. These individuals do not make as good parents at this age as they might have when younger.

Post-Natal Care

51.—Can a woman "keep her figure" and have babies?

Yes, indeed, if she is healthy and has the proper prenatal and post-partum care. She must go into labor in good condition, and stay in bed long enough for her organs to return to normal. During this period, special exercises are of great utility in restoring tone to the muscles.

52.—For what are babies "measured"? Does this do any good?

Most babies would grow just as well whether they were measured or not. A record of the various measurements of babies is of scientific value in studying the problems of pregnancy and labor. The physician who delivers the baby may find such measurements quite useful. The parents also will be glad to refer to them to see if the baby grows at a normal rate. This does not refer to the magical "measuring" which is sometimes practiced, but which has no sense or value.

Divorce

53.—According to records, it is known that about 95 percent of divorces are caused by sexual disagreement or lack of sexual satisfaction. Why wouldn't it be better for a couple, contemplating marriage, to have sexual intercourse while single and find if their desires are satisfied and thus come to more of an agreement regarding sex relations? Of course, I understand that such relations should take place only between sane and educated people who would not abuse the privilege.

Experimental pre-marital intercourse would be a very poor and unsatisfactory solution. Many physical difficulties are due to ignor-

ance on the part of one or both parties, which could be much better removed by physical examination by and conference with an informed physician than by blind experimentation. In addition, quite a number of difficulties are due to anatomic abnormalities, such as phimosis, hooded clitoris, resistant hymen, urethral caruncle, etc., for the removal of which, obviously, no amount of experimental coition will be effective. Minor surgery relieves such conditions promptly. I wish I could ask the propounder of this question, who would diagnose "sane and educated people," and how and where to draw the line on "abusing the privilege." (See answer No. 32; also 10 to 15.)

Free Love and Companionate Marriage

54.—Does the practice of free love elevate the true standard of love?

No more so than communism elevates the true standard of civilization. True love is an exclusive emotion. Indiscriminate relations necessarily do not partake of the exclusive mental and spiritual ties which exist between a couple who are truly in love with one another (see answers 10 to 15). Therefore, there is not much other than the physical urge to serve as a bond.

Some proponents of free love have very specious arguments, principally based upon the well-known axiom that "practice makes perfect." Such a condition is practically promiscuity and obviously not far from the status of the creatures of the barnyard, and therefore the opposite of elevating. "Practice," with one exclusive beloved, is much more satisfying than is promiscuity. If this were not so, monogamy would not be the widespread custom that it is among civilized people, and various forms of plural marriages, so common in the past, would be in more favor now. For example consider Mormonism and Turkey.

55.—Do most companionate marriages, so to speak, result in family marriages finally?

Companionate marriage is very much of an experiment, in spite of the dicta of its eminent proponent. There are practically no statistics to draw upon for an answer to this question. Matrimony, at best, is a difficult profession. The great fallacy of companionate marriage is that it is entered into, frankly, as a nonchalant experiment, without careful study to determine the probability of success or failure. Proper friendship, guidance and training for matrimony would enable young people to choose only partners with whom there would be almost a certainty of success. With Americans, as prudish and ignorant as they are, such a condition cannot be realized until a new generation has been properly educated. The divorce rates in more enlightened countries prove the value of training for marriage and careful selection of a spouse.

Miscellaneous: Unclassified

56.—Does self-consciousness have anything to do with moral danger in regard to sex?

Received anonymously, this question is hard to clear up and answer properly. Its author probably is wondering if the self-conscious, bashful college girl is more or less liable to get into sexual difficulties than the average student. Probably not, for there seems to be little relation between "self-consciousness" and "moral danger."

The self-conscious student is probably also ignorant and perhaps easily led by one more worldly-wise. Unquestionably, the student who is properly informed on sex questions is more able to take care of himself, or herself, than one who is not.

57.—Should not these principles you have been giving us be taught to all college students at the beginning of their freshmen year? Wouldn't it be of great help in making the most of their friendships? Why isn't this done?

Yes, indeed! A thorough knowledge of friendship and marriage is what is needed by most young people and married folks alike in our country. To teach the many phases of this field to all who need such information is a tremendous job. A beginning must be made somewhere, and obviously in college is the easiest and best place. It fits best into the "orientation" courses which are given quite generally to freshmen students. Not only would it be a great help in making the most of their friendships, but thereby it would greatly enrich their spiritual and intellectual lives.

There are at least two good reasons why this is not done: First, the inertia of the average college program—it is always much easier to continue with what has proved to be smooth-running and comfortable than it is to launch out into unknown and disturbing experiments; second, while there are many people who have a smattering knowledge of matrimonial problems, and there are quite a number who are expert psychologists, sociologists, neurologists, etc., there are very few qualified teachers who have a complete command of all the different phases of the subject.

(THE END)

The A-B-C of Cancer

8-A. Tumors of the Gastro-Intestinal Tract

By Charles F. Geschickter, M.D., Baltimore, Md.

The Surgical Pathological Laboratory, Department of Surgery, Johns Hopkins Hospital and University

BENIGN tumors are relatively rare in the gastro-intestinal tract. With the exception of the polypoid adenomas and the socalled carcinoids or argentaffine tumors there are no benign epithelial tumors of clinical significance. Benign myomas, angiomas and other new growths of the supporting wall of the digestive tube occur. They are not peculiar to this region and are omitted from the present discussion. The following tabulation presents the distribution and classification of benign tumors in the present series.

TABLE I

BENIGN TUMORS OF THE GASTRO-INTESTINAL TRACT

Adenomas (Polyps)	Esophagus	0
	Stomach	8
	Small Intestine	15
	Colon	10
	Rectum	50
Total		83
Argentaffine Tumors (Carcinoids)	Stomach	1
	Small Intestines	10
	Appendix	23
	Colon	2
Total		36
Enteric Cysts	Retroperitoneal	1
Accessory Pancreatic Tissue	Small Intestine	6
Myomas	Stomach	19
	Small Intestine	4
	Rectum	1
Total		24
Angiomas	Small Intestine	4
	Rectum	1
	Stomach	1
Total		6
Lipomas	Fibromas	10
GRAND TOTAL		166

Adenomatous Polyps: Adenomatous polyps may be singe or multiple. The multiple type may rarely give a familial history showing a similar condition in several members of a single family. The table above gives the distribution of these growths in the digestive tract.

With the exception of reduplication of the mucosa at the margin of traction diverticula, such growths are practically never observed in the esophagus. Stewart reports 56 gastric polyps and 127 in the large bowel, of which 23 gastric polyps and 57 colonic tumors were multiple. He estimated that five percent of carcinomas of the stomach were related to such pre-existing benign polyps, whereas 36 percent of cancer in the large bowel had such an origin. Some observers, such as Fitzgibbon and Rankin, believe that practically all carcinomas of the large bowel have such an origin.

These benign tumors projecting into the lumen of the digestive tube cause obstruction or bleeding. In the rectum or stomach, frank hemorrhage may occur, whereas in the large bowel and intestine, tarry stools or anemia result. Hereditary multiple polyposis occurred twice in the present series. Schilling has reviewed the literature on this phase of the disease. The entire tract, from the stomach to the rectum, is affected, usually in males, and in 50 percent of these cases malignancy supervenes in one or more polyps. As many as six members in one family have been affected. Regardless of the form of the disease, young adults are usually affected. Even where the disease is hereditary it is usually not seen until after the twentieth year.

Histologically, polypoid adenomas are composed of single or reduplicated layers of columnar epithelium, lying on delicate stalks of connective tissue. The presence of secretory epithelium varies with the portion of the bowel affected. The smaller growths show an orderly arrangement of epithelium, while the larger growths show marked hyperplasia, variation in the nuclei and a tendency to invade the surrounding mucosa and stroma. With such invasion it is difficult to distinguish between benign adenoma and early adenocarcinoma.

Solitary polyps in the rectum may be treated by excision or fulguration. Elsewhere in the tract, resection is the treatment of choice. Multiplicity and malignant change are two factors which must be borne in mind when treatment is undertaken.

Argentaffine Tumors: Since the studies of Huebschamm and Masson, which related the carcinoids of the appendix to the chromaffin system, over 400 such tumors have been described in the literature. Over 300 of these cases have been recorded in the appendix, 100 in the small intestine and scattered cases in

the stomach, large bowel and rectum. In the present series, 23 of these tumors occurred in the appendix, 10 in the small intestine, 2 in the large bowel and 1 in the stomach. Adults are usually affected, the age limits being 12 to 66 years, in this series.

Symptoms appear early in the appendix, because of the small size of the lumen. Appendicitis is mimicked and at operation a bulbous enlargement near the tip of the organ is usually found. When the tumor occurs in the intestine, diarrhea without melena (produced by incomplete obstruction) is the major symptom. Although the majority of these growths are benign and run a chronic course, 20 percent may undergo malignant change. Eight of the cases studied by Lewis and Geschickter showed secondary deposits in the lymph nodes. Even where such secondary deposits occur a cure may be affected.

On microscopic study the tumor cells are found growing in islands or strands, surrounded by dense bands of connective tissue. The cells are epithelial in nature, moderate in size, and tend to form a syncytium. The small, more deeply staining cells may show rosette formation. These epithelial cells may be impregnated by silver, hence the term argentaffine tumor.

Aberrant Pancreatic Rests: These tumors are glandular misplacements, which form small, submucous, grayish-white nodules in the wall of the bowel, rarely exceeding a centimeter in diameter. They are usually asymptomatic and are discovered only at autopsy. One of the six cases in the present series produced an intussusception of the ileum. Microscopically, characteristic pancreatic tissue is present. The cells are arranged in acini and have a granular basophilic cytoplasm. In addition there are islands of Langerhans and small numbers of pancreatic ducts. According to Warthin, these growths arise from the lateral buds of the pancreatic ducts as they pass through the intestinal wall of the embryo. They are thus segregated or carried up or down the digestive tract during the process of fetal growth.

Diverticula and Enteric Cysts: Diverticula may be observed in the gastro-intestinal tract of the embryo, most commony between the duodenum and the terminal ileum, but also in other portions of the tract (Lewis and Thyng). These knob-like protrusions may persist or disappear and the persisting outpouchings may give rise to the clinical findings of diverticulosis (multiple outpouchings of the intestine), single diverticula or enteric cysts. Some of the enteric cysts are formed from vestiges of the socalled post-anal gut, which in the embryo connects the central canal of the spinal cord with the invaginating portion of the primitive anus. The pulsion and traction diverticula of the esophagus are usually attributed to weakness in the muscular wall at the pharyngeal junction and inflammatory adhesions produced by infections of the mediastinal lymph nodes, rather than to congenital outpouchings such as are found in the intestinal tract.

Diverticulitis, complicating congenital diverticula of the gastro-intestinal tract, is most common in the region of the sigmoid, in elderly patients. It is often referred to clinically as right-sided appendicitis, the patients having intermittent attacks of pain, fever, tenderness, rigidity and a recurrently disappearing mass, in the region of the sigmoid. It is distinguished from carcinoma of the large bowel by the absence of blood in the stool and by the characteristic outpouchings in the roentgenogram. Cases with persistent symptoms can be cured by resection.

Meckel's diverticulum is usually connected with the ileum and may produce obstruction, by the twisting of a loop of bowel at this site.

Enteric cysts may be found within the mesentery, arising from diverticula which have lost their communication with the intestine. Such cysts have been reported in the duodenum (Gardner and Hart). The majority of cases that have been ileocecal in location are attributed to remnants of Meckel's diverticulum. They have been reported at all ages. Histologically they are composed of all the normal layers of the digestive tract, the epithelial lining varying with the location of the cyst. The retroperitoneal enteric cyst, arising from remnants of the post-anal gut, shows a mucous membrane characteristic of the large bowel. They are more common in infants and are found anterior to the sacrum or cocyx. Typical columnar and goblet cells are found in the lining, but no serous or muscular coats are seen. The cysts are benign and may be shelled out. Ballantyne, however, has reported a carcinoma of post-anal gut in a female of 38 years.

Malignant Tumors of the Gastro-Intestinal Tract

Carcinoma of the digestive tract is responsible for the greatest number of cancer deaths. The majority of these growths are not diagnosed in time for effective treatment, approximately 50 percent being beyond operative measures at the time of their clinical recognition. In frequency, carcinoma of the stomach equals or exceeds the total number of cancers in the esophagus, small intestine, appendix, colon and rectum, the distribution in the present series being as follows:

Esophagus	80
Stomach	750
Intestine	20
Appendix	2
Colon	250
Rectum	370
Total	1,47[illegible]

In the different regions of the gastro-intestinal tract, the percentage of surgical cures increases from above downward, from zero in the esophagus and 5 percent in the stomach and intestines, to 15 percent in the colon and 30 percent in the rectum. These growths are not radio-sensitive.

Carcinoma of the Esophagus: Cancer occurs most frequently in the lower third of the esophagus, in males between the ages of 50 and 60 years. The disease usually terminates fatally within a year of its clinical recognition. Forty (40) percent of the 80 cases were in the lower portion of the esophagus, 4 of which affected both the cardiac end of the stomach and the terminal portion. The average duration of symptoms was five months (excluding six cases in which the trouble extended over a period of beyond a year).

Difficulty in swallowing, increasing rapidly to the point where liquids only could be retained, was the outstanding clinical feature. This was noted in all but four cases. Pain substernally or in the region of the dorsal spine was the next most frequent symptom. In six cases the initial symptoms were dyspnea caused by compression or invasion of the trachea or main bronchi. Loss of weight and weakness develop rapidly in these patients.

Gradual onset of symptoms dating from three to eighteen years previously was noted in four cases in the present series. Two of the patients complained of unusual sensations in swallowing and attributed their sense of pressure behind the sternum to a form of chronic indigestion. Such cases with chronic symptoms may have an origin in benign leukoplakia or small diverticula of the esophagus. The visualization of a zone of constriction in the roentgenogram is an important aid to diagnosis. Biopsy with the esophagoscope confirms the diagnosis.

Palliative treatment in cancer of the esophagus may be given in the form of gradual dilatation with the bougie or with irradiation. Where the obstruction cannot be thus relieved, gastrostomy may be performed. Resection of the esophagus for cancer has been successively attempted, but, with few exceptions, no cure has been affected. All of the cases of the present series proved fatal. Carcinoma of the esophagus is usually of the squamous-cell type, with or without keratinization. This form of lesion extends longitudinally or around the esophageal wall, giving rise to constriction or compression before ulceration occurs. Adenocarcinoma or basal-cell cancer is rarely found in this location.

Carcinoma of the Stomach

Carcinoma of the stomach leads in cancer mortality, and surpasses in frequency the combined total of cancers for the remainder of the gastro-intestinal tract. The disease in a small number of instances (5 to 10 percent) may have its origin in a preceding gastric ulcer or benign papilloma, but more often it arises without any demonstrable preceding pathosis. Males are affected more often than females, in the ratio of three to one. The predominate age period is from 40 to 60 years, but in 4 percent of the cases the patients are between twenty-eight and thirty-nine years. The disease has been noted in infancy. The usual locations are prepyloric, along the lesser curvature or on the posterior wall. In two-thirds of the cases the disease begins abruptly with hemorrhage, pain, distention or vomiting. This largest group of patients is symptom-free from three to ten months prior to the time they consult their physician. Those with the shortest duration of symptoms in this group have the poorest prognosis. Loss of weight and anemia may be prominent if the lesion is advanced. In approximately one-third of the cases, the disease is insiduous in onset, with dyspepsia that suggests gastric or duodenal ulcer. Pain in relation to meals, relieved by alkali or foods and eructations, is a prominent symptom in this group. These cases are much emphasized by advocates of the theory that carcinoma of the stomach begins in ulcer.

The leading findings on clinical examination are a palpable mass in the region of the epigastrium (present in about 50 percent of the cases), signs of retention of gastric contents, and anacidity upon gastric analysis. High values for combined acids, in the absence of free hydrochloric acid, are evidence in favor of pyloric obstruction or decreased gastric motility, which is most often due to gastric carcinoma. Lactic acid or the Boas-Oppler bacillus may be found in the gastric analysis. Intragastric photography, estimation of soluble albumin in the gastric contents and the presence of proteolytic enzymes are among the aids to diagnosis advocated.

The most important adjunct to diagnosis is the roentgenogram. Deformity in the gastric lumen and changes in gastric motility following barium intake are two outstanding features. Large growths protrude inside the lumen and ulcerations are present as a marginal or central defect. Normal gastric rugae are smoothed or effaced. Cancer in the mid-portion of the stomach may produce an hour-glass defect. Absence of gastric peristalsis is the most common change in motility. If obstruction is not present, the pylorus is gaping. Obstruction is present in 60 percent of cases and is denoted by a residue after six hours or by delayed emptying under the fluoroscope. Lesions of the cardiac end are difficult to demonstrate and are best seen by exerting pressure below on the barium-filled stomach during fluoroscopic examination. Defects caused by cancer are persistent and

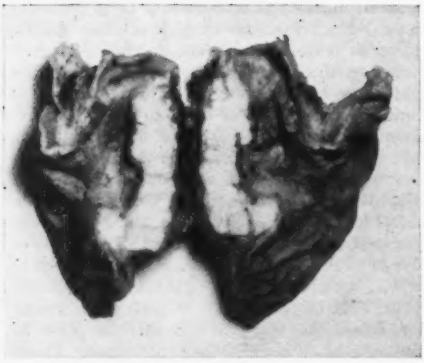

Fig. 1. (Path. No. 41034).—Bulky Adenocarcinoma of the Stomach.

remain constant in location through successive roentgenograms and in spite of the administration of antispasmodic drugs. Multiple, small defects in the film are usually benign lesions. Gastric syphilis may resemble carcinoma, but produces no palpable tumor. In distinguishing cancer from gastric ulcer in the roentgenogram, the following are helpful: Cancer has a raised edge and usually exceeds 2.5 cm. in diameter; absence of gastric spasm and obliteration of the surrounding rugae favor malignancy.

Clinical and roentgenologic factors must be weighed in selecting operable from inoperable cases. Cardiac cancer is not resectable, in most instances. Cancer in the second half of the stomach, which occupies most of this region and extends beyond the incisura, is seldom operable. Fixation of the stomach is unfavorable for resection, while metastases to the lungs or bones, which may be visualized in the x-ray film, precludes operability. Metastases to the rectal shelf, to the supraclavicular nodes, or to the abdominal wall are likewise signs of inoperability. Free fluid in the abdominal cavity is also an unfavorable sign.

On exploration, extension of the disease to the neighboring lymph nodes, involvement of the omentum and liver, or fixation of the mass to adjoining structures are the chief causes of inoperability. Grossly, carcinoma may be of the bulky, polypoid type, protruding into the gastric cavity. These growths, on microscopic examination, are usually adenocarcinoma, occasionally with mucoid or gelatinous changes. Sessile ulcerating carcinoma infiltrates the gastric wall to a variable degree. It may prove to be microscopically grade four adenocarcinoma (anaplastic or so-called medullary cancer), or scirrhus carcinoma. Diffuse infiltration of the entire stomach wall, with scattered nests of malignant cells and thickening of the muscular walls, is known as linitis plastica.

Of 650 carcinomas of the stomach admitted to the surgical wards during the last forty-five years at the Johns Hopkins Hospital, only 135 cases or 20 percent were resectable. Of this number, 13 were living beyond the five year period; 5 beyond the three year period; and 4 cases died of the disease four or more years after operation.

(To be continued, in one more installment)

Myasthenia Gravis

(A Case Report)

By S. Vernon, M.D., Willimantic, Conn.

THE contributions to the effective treatment of myasthenia gravis have already been made. This communication is intended merely to point out that there may still be extant undiagnosed cases of the chronic form of the disease. It is now a greater obligation of the profession to locate these cases since, with the present-day knowledge of treatment, so much more help can be given them than formerly.

Diplopia after visual effort might be the only symptom; an habitual dropped jaw and fallen-lid expression might give the first clue. Slow, drawling, careful, though somewhat slurred speech might offer the best lead. A feeling of "heavy weights on the legs," or the need for pauses to rest repeatedly during the performance of the duties of the day might be present. The patient might be so accustomed to these pauses that a leading question would be necessary to elicit this fact. An asymmetric position of the head, due to muscle weakness, should be looked for. It is helpful to remember that there is no involvement of smooth muscle, nor do psychic disturbances occur in this condition. Muscle weakness after effort, with return of function after rest, is the outstanding fact.

Case History

Mrs. M. G., age 72, was first observed in May, 1933. Her son was told about the condition suspected, but she was not seen professionally until April 6, 1934. It was learned

then that she had had the condition for a long time, and had been treated with tonics, glandular products and other medication, without avail. She was therefore skeptical about the possibility of improvement and delayed coming for advice.

The patient was born May 31, 1862. At the age of four she had pneumonia; afterward she "had to learn to walk all over again." She was married at the age of thirty-two and had one son.

At the age of forty-four she had a severe attack of measles, and was bed-ridden for one month. After she had recovered from this illness and was able to walk, she noted stiffness in her gait and inability to use her feet normally. At first, she thought that this was due to weakness, but when this symptom persisted she sought medical aid. She also noted that her speech had grown slower. During the next twelve years she was treated by five physicians and two osteopaths. At times she seemed to get a little relief, but the symptoms always recurred.

On clinical examination, her gait was slow and careful; she used a cane and walked short distances only. The eyelids were drooped, and this was at times compensated by a forward tilting of the chin. Her speech was thick, slow, drawling and limited to short statements. She was fairly well nourished and well preserved. Her deep tendon reflexes were hyperactive, which was considered unusual. However, there was a transitory ankle clonus. She complained of a "sore feeling" in the chest when breathlessness occurred. She was given glycine, one level teaspoonful, and ephedrine ¼ grain (16 mg.) twice daily, as a therapeutic test.

On April 13, 1934, she stated that she could climb with greater ease the two steps to her back door. However, she "felt sick all over" for three-quarters of an hour after taking the glycine. The reflexes were still active; blood pressure, 178/98; pulse, 80.

On April 27, 1934, she stated that possibly she was a little better, but that was probably her imagination. A member of the family stated, however, that her movements were visibly improved. The patient complained that the fingers of her left hand had become swollen. (This symptom was also noted in another patient taking glycine for ocular myasthenic symptoms.)

On May 11, 1934, the patient felt that improvement was definite. A diet insuring sufficient vitamins and cod-liver oil was prescribed. The dose of glycine was then one level teaspoonful twice a day, followed by ¼ grain of ephedrine. At this time, examination of the muscles of the arms showed scattered fibrillary contractions. The blood pressure was 158/90.

On June 7, 1934, it was quite evident, to the patient and the members of her family, that the gain had been persistent and continuous. She was given glycine, 15 grams twice daily, followed by ephedrine ⅜ grain (24 mg.) a half-hour later.

On August 3, 1934, the patient was quite enthusiastic about the treatment, because she was noting steady improvement.

Comment

In doubtful cases it is probably expedient to perform the therapeutic test, for a biopsy to detect lymphorrhages in the skeletal muscle might be regarded, by some patients, as an unnecessarily formidable procedure. The Jolly myasthenic reaction is also useful in diagnosis. It consists of a loss of irritability and contractibility of muscle, brought on by activity, with return of irritability after an interval of rest. However, if a question of serious nervous disease exists, it is not desirable to defer diagnostic effort by depending solely on the therapeutic test.

The new knowledge of the fairly effective treatment of myasthenia gravis makes it desirable to search more carefully for chronic cases of the disease, in order to give them the benefit of this treatment.

784 Main St.

PSYCHIC RESEARCH

Investigators worthy of their calling may not espouse "causes" or gloss over data in an effort to protect some individual mediumship. To do so brings ridicule upon themselves and upon their subject. Real workers in the field must be able to face discouragement from others, and the baffling phenomena of the hysteric, trickplaying psychic, and emerge from the ordeal with a few precious and triumphant facts as the reward of a lifework. In this respect, as in others, psychic science is one of the great sisterhood of sciences. In human value and service, it is as richly rewarding as any science which man has ever devoted time and thought.—GERTRUDE O. TUBBY.

PHYSICAL THERAPY AND RADIOLOGY

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Ionic Medication*

By Walton Forest Dutton, M.D., Amarillo, Tex.

MEDICAMENTS, according to Solis-Cohen and Githens ("Pharmacotherapeutics," 1928), may be administered for either local or systemic effect, or both, by utilizing the power of the electric current to cause migration of the dissociated ions of solutions of electrolytes. The process is termed *ionic medication* and was applied in local anesthesia, by Benjamin Ward Richardson, as early as 1859. W. J. Morton, Betton Massey and more recently Leduc, have contributed largely to its development.

Socalled *cataphoresis* is simply a variety of ionic medication in which the medicament, commonly an alkaloidal salt, is applied at the anode. But the cathode also is utilizable; and according to the choice of electrodes and agents, medicinal effects may be produced upon the surface of the body or within the deeper tissues.

The procedure may therefore be used for *local effect*—when either superficial or deep ionization may be called into play—or for *systemic effect*—when deep ionization will be resorted to. In either case the principle is simple; it is that "unlikes attract; likes repel."

Negative elements, acid radicals and OH (anions) tend to gather about the positive electrode (anode). Positive elements and basic radicals (cations) tend to accumulate at the negative electrode (cathode). These movements are illustrated in the following diagram:

DIAGRAM ILLUSTRATING MOTION OF IONS UNDER THE INFLUENCE OF A CONTINUOUS ELECTRIC CURRENT

Cathode	*Solution*	*Anode*
—		+
Cations K <——	KI	——> I Anions
K <——	K_2SO_4	——> SO_4
H <——	H_2SO_4	——> SO_4
K <——	KOH	——> OH

Thus, if a solution of KI (potassium iodide) be applied to the surface of the body by means of the anode, the cathode being placed at any indifferent point, the positive ion K will seek the cathode and thus enter into the tissues, while the negative ion I, released from the combination, will be deposited upon the surface. If, on the other hand, the solution of KI be applied at the cathode, the anion I will seek the anode and penetrate the tissues, while the cation K remains at the surface, probably forming KOH or some neutralizing combination.

In *ionic therapy*, therefore, the first point to be determined is whether action is desired at the skin surface or in the deeper tissues. The electric sign (+ or —) of the special agent whose effect is sought will then govern the choice of the electrode by which it is to be applied (active electrode). For *superficial effect*, anions (—) are to be applied at the anode (+); cations (+) are to be applied at the cathode (—). (The names of pole and ion are alike, but their signs are opposite.) When penetration is sought, anions (—) must be applied at the cathode (—) and cations

*This is an abbreviated version of a chapter in the book, "Parenteral Therapy," by Drs. W. F. Dutton and Geo. B. Lake, which is to be published within a few months.

(+) at the anode (+). (The names of pole and ion are unlike, but their signs are the same.) The medicament, it is held, enters the skin through the orifices of the glands.

In the application of salts for ionic penetration, the *basic-radical* (cation) is, as a rule, the more important ion in the salts of *organic bases*, and the application must be made at the anode. This is particularly true of the salts of the alkaloids (morphine, cocaine, strychnine, aconitine, etc.). With the *inorganic* compounds, as a rule, the acidic radical (anion) is the more important and the application must be made at the *cathode*. This is particularly true of bromides, iodides and salicylates. Exceptions are to be found, however, in each class. Thus it may be desired to introduce potassium or lithium into a gouty joint. In that instance, the cation would be the more important ion of the inorganic compound and the anode would become the active electrode. If a superficial action of iodine were also desired, an iodide of the base would be used; otherwise a carbonate.

In acids, the hydrogen (+) is the cation and the electro-negative element or group of elements, the anion. In bases (oxides as well as hydroxides) the hydroxyl group (OH), which will be present in an electrolyzed solution of an oxide, is the anion and the electro-positive element or group of elements is the cation.

Technic

A pad of absorbent cotton is saturated with the solution to be ionized and fastened to a metal or carbon plate, which is to be the active electrode. This, applied to the part treated, is relatively small, the aim being to concentrate the electric energy upon a limited area. The other (*indifferent* or *dispersing* electrode) is commonly a large metal plate covered with lint or cotton, the covering being saturated with water or with a weak solution (about 1 percent) of sodium chloride. It is applied at any convenient and, as a rule, distant point. The aim is to diffuse the electric energy over a considerable area. Contact between the patient and the generator must be as perfect as possible. Any interruption of the current through faulty connections will cause a painful and sometimes dangerous shock. Connections should be soldered.

In antiseptic and destructive (surgical) applications, the metal of the active electrode may be that of the ion whose influence is sought—zinc, copper, copper amalgamated with mercury, etc.—or one resistant to acids, as platinum or gold.

Tinfoil and, in less degree, tinplate and lead have the advantage of being easily adapted to the contours of the body, thus making good contact at every point of the surface. These materials are, therefore, preferred by some operators, in certain cases where such contact is of importance; but if the application is to be at all prolonged, it will be necessary to use thick pads in order to absorb the ions or salts of lead and tin formed by the electrochemical attack upon the plate. New pads are to be used at each application. When the active electrode is applied to the surface, zinc sulphate, copper sulphate and the like are employed as antiseptic or destructive agents at the anode in from 2- to 5-percent solutions. For the treatment of sinuses, cavities, etc., rods—and for destruction of warts and other superficial growths, needles—of the metal to be ionized (preferably zinc) are used. Amalgamating the metal, by dipping it in a bath of liquid mercury after a short immersion in dilute sulphuric acid, will facilitate the process, and prevent the otherwise indelible black or green stain following ionization by iron or copper (Betton Massey).

Chlorine anions (with the concomitant OH ions), from a 5-percent solution of NaCl, at the active cathode, are said to have proved of benefit in the treatment of scars, keloids, corneal opacities, Dupuytren's contractions and ankylosis of joints.

The illustrations might be multiplied, but those cited will be sufficient to give an idea of the method and its range of usefulness.

Intensity of Current

The resistance offered by the tissues to the voltage used in ionic medication differs so greatly with the site and method of the application that no fixed rule can be given as to the strength of the current. It is best to put the electrodes in place, fastened, if necessary, by adhesive strips, and make sure of the integrity of all connections and of the interposition of the full resistance of the rheostat employed, before turning on the current. The rheostat-resistance is then to be very gradually lessened, so that one begins with a minute current and slowly increases, watching the ammeter closely in order not to exceed a maximum determined, and also to facilitate estimation of the active quantity of current required.

For *local anesthesia, cocaine hydrocloride* (or other electrolyzable compound) may be used at the anode in from 2- to 10-percent solution, the cocaine radical being the cation.

For *resolvent local action*, with some systemic effect from absorption, the *iodine ion* (anion) may be driven in from the cathode by using a 2- to 10-percent solution of potassium or sodium iodide. The method is used in simple or fibroid goiter; less frequently and with less success in the goiter of Graves' disease; in arthritis deformans; and in some cases of obstinate neuritis.

The *salicylic ion* (anion), driven in from a 2- to 5-percent or even 10-percent solution of sodium salicylate at the cathode, is useful in

various forms of arthritis, neuritis, perineuritis and neuralgia. It has also been used for pruritus, both at the anode and cathode, in the former instance for superficial effect.

The *magnesium ion* (cation), driven in from the anode, is said to have a useful effect in subduing local inflammation and in destroying warts. A 5-percent solution of magnesium sulphate in water is the electrolyte employed.

The *quinine cation*, from a 5- to 10-percent solution of one of its salts, applied at the anode, is said to give relief in trigeminal neuralgia; and prolonged applications of the same ion have been made with asserted good result in facial paralysis and in septic joint affections, after removal of the cause of infection.

In the treatment of human beings, Leduc suggests, as a maximum not ordinarily to be exceeded, 2 milliamperes per square centimeter of active electrode, for 15 to 20 minutes. L. Jones uses rather stronger currents for proportionately shorter times. Stronger currents, of course, will be used in what we have termed the surgical applications of ionic therapy rather than in the medicinal applications, which latter may be from one-half to one-tenth the strength of the former. When the current is too strong, the application may cause discomfort. This may be prevented by the previous introduction of cocaine or relieved in a similar way when it occurs. Of course, the cocaine must be applied by means of a separate pad.

TABLE TO INDICATE THE SALT AND ELECTRODE TO BE USED FOR INTRODUCING THE CHIEF THERAPEUTIC IONS

Ion	*Salt*	*Electrode*
Zinc	Zinc Sulphate	Positive
Copper	Copper Sulphate	Positive
Mercury	Perchloride of Mercury	Positive
Quinine	Quinine Hydrochloride	Positive
Cocaine	Cocaine Hydrochloride	Positive
Chlorine	Sodium Chloride	Negative
Iodine	Iodide of Potassium	Negative
Salicyl	Salicylate of Soda	Negative
Histamine	Histamine Hydrochloride	Positive

Certain *solutions*, preparations and other articles should be kept ready in the ionization room. The solutions can be kept in a concentrated form and diluted with warm water when required.

1.—Zinc sulphate, 5 grams (75 grains); glycerin, 57 cubic centimeters (2 ounces); water to make 1,000 cubic centimeters (35 ounces). Dilute with an equal quantity of warm water.

2.—Sodium salicylate, 2-percent, in water, or 175 grains to a pint. Dilute with an equal quantity of warm water.

3.—Sodium chloride (common salt), 2-percent in water, or 175 grains to a pint. Dilute with an equal quantity of warm water.

Questions and Answers Pertaining to Galvanic Current in Ionic Therapy

What is a galvanic current?

Answer: The galvanic current is a direct, constant, continuous current, possessing a positive and negative polarity.

How may the galvanic current be obtained?

Answer: The galvanic current may be obtained from a chemical source, in the form of a wet- or dry-cell battery, or from a mechanical source, in the form of a motor generator set.

What difference exists between the reactions of positive and negative galvanism?

Answer: The reactions of the positive pole are practically diametrically opposite to the reactions of the negative pole.

What are the important reactions of both positive and negative galvanism?

Answer: The important reactions of the positive and negative poles are as follows:

Positive	*Negative*
1.—Oxygen gas liberated	Hydrogen gas liberated
2.—Acid	Alkaline
3.—Increases hydrogen ion concentration	Decreases hydrogen ion concentration
4.—Coagulation	Liquefaction
5.—Repels metal ions	Repels non-metal ions
6.—Decreases muscle irritability	Increases muscle irritability
7.—Vasomotor constrictor	Vasomotor dilator
8.—Sedative	Irritating

What is the meaning of ionic medication?

Answer: The term ionic medication signifies the introduction into the human tissues of particles called ions.

What is an ion?

Answer: When salts, acids and bases are in an aqueous solution, a definite percentage of the molecules dissociate into their constituent atoms. The metals become electropositive by losing an electron or electrons. The non-metals become electro-negative by gaining an electron or electrons. The electrically charged atoms are termed ions, meaning wanderers, because they move aimlessly about in the solution. Such a solution is called an electrolyte. The electrical current is transported through such a solution by the ions. The ions are not capable of chemical reactions until they lose their charge and become electroneutral or free atoms again.

How deeply into the tissues do these ions penetrate?

Answer: Their penetration is extremely superficial and limited to a few millimeters. They do not penetrate into joints nor to any appreciable depth.

Doesn't the electrical current travel deeply into the tissues?

Answer: It probably does.

Why are the ions limited in penetration?

Answer: The current is conveyed through a solution by ions offering the least resistance and having the greatest velocity. Their

velocity is dependent upon the electro-chemical equivalent and the molecules of water they attract. The body is much like an electrolytic solution, and when the current is carried through the skin it is transferred to the far more numerous and rapidly moving H and OH ions. The ions used in the solution thus become electro-neutral and hence free atoms forming chemical reactions with body proteins, and precipitate as soluble or insoluble compounds. Their specific action is, therefore, quickly lost. The rapidly moving circulation also must be taken into consideration.

Has ionic medication any value?

Answer: Yes. It is much superior to topical applications. It has a place in ionizing a mucosal surface, an indolent ulcer or in selected cases of arthritis.

Does it make any difference which pole is applied to the pad covering the area to be treated?

Answer: Yes. We apply the physical law that *like charges repel.* All metals are electro-positive and all non-metals electro-negative. Hence when we desire to use a metal salt we apply the positive pole to the pad holding the solution, because like polarities repel.

Is the skin a good conductor of the electrical current?

Answer: No. The skin is relatively deficient in ions and the presence of ions is necessary for the current conduction.

How can this deficiency be met?

Answer: By using heat in some form to the part, thereby increasing the blood supply and the salt excretions, which are excellent electrolytes. The electrodes applied to the body must also be saturated in an electrolytic solution.

How may the doses be determined?

Answer: Two (2) milliamperes per square inch of active electrode surface for areas of unbroken skin, and 4 milliamperes of current per square inch of active electrode for broken skin, are safe guides for dosage.

Why may we use double the current density per unit area when treating denuded surfaces?

Answer: The denuded areas are rich in electrolytic solutions and therefore offer a lower resistance to the current.

What concentration is used for the various medicaments?

Answer: Two percent.

What is meant by the term dispersive pad?

Answer: The dispersive pad is used to disperse the current from the patient to the machine and is much larger than the active electrode so as to reduce the current density per unit area to a minimum, thus reducing its reaction as much as possible. It is sometimes called the *indifferent* or *inactive* electrode.

What should be the size of the dispersive pad?

Answer: The following table is suggested as a means of determining the size of the dispersive pad.

Dispersive Pad	*Milliamperage on Active Electrode*
4 in. x 6 in.	1 to 24 milliamperes
6 in. x 8 in.	25 to 49 milliamperes
10 in. x 12 in.	50 to 99 milliamperes

Is it necessary to give a written prescription to the technician when ordering treatment?

Answer: Yes. The prescription should include at least:

1.—The necessary amount of energy—milliamperage.

2.—The necessary pressure—voltage.

3.—The pole used—positive or negative for active electrode.

4.—The time — treatment duration — visits per week.

5.—Electrode application—position of electrodes. The solution to be used for the active electrode.

What are some of the conditions that may be amenable to the coagulation reaction of positive galvanism?

Answer: Warts, naevi, small blood tumors and other similar growths have been found amenable to positive galvanism. (Cumberbatch).

What conditions may be amenable to the liquefaction reaction of negative galvanism?

Answer: Recent scar tissue and superfluous hair are indications for negative galvanism. (Magill; Hayes).

What conditions may be indicated for copper ionization?

Answer: Vaginitis, endocervicitis and endometritis are indications for copper ionization. (Turrell; Cumberbatch).

Name three indications for zinc ionization.

Answer: Otorrhea, vasomotor rhinitis, fistula and indolent ulcers are indications for zinc ionization. (Friel; Warwick; Magill.)

Oliver-Eakle Bldg.

BE PREPARED

A physician develops, in mind, soul and body, by making use of things, and patients are so organized that the physician must have things with which to treat his patients.—Editorial in Osteopathic Physical Therapeutist, *July, Aug., Sept., 1933.*

NOTES AND ABSTRACTS

Fever Therapy in Gonococcic Infections*

THE treatment in the cases reported has been carried out by means of the air-conditioned fever chamber known as the "Kettering hypertherm," the development of which has been the result of the collaboration of Dr. Walter M. Simpson, of the Miami Valley Hospital, Dayton, Ohio, and of Mr. C. F. Kettering, director of the Division of Research, General Motors Corporation, also of Dayton.

The chamber consists of a horizontal box, the base or bed of which can be rolled in or out at will. The patient lies on this bed, resting on a comfortable air mattress, which is rolled into the chamber proper, and the chamber is then hermetically closed by means of a sliding vertical panel, through which the head of the patient projects. Thus, when the chamber is closed, the patient's body is within the chamber while the head is outside, resting on a shelf provided for the purpose. At the foot of the chamber, in a special compartment, is the simple machinery that heats and humidifies the air.

The temperature of the air within the chamber is controlled by a thermostat and can be varied at will. The relative humidity of the air is controlled by a humidistat, and this factor also can be increased or decreased as may be required. By means of a fan, the heated and humidified air is forced between the two layers of the double ceiling of the chamber, down over the patient, and thence back to the special compartment at the foot end of the chamber, through a metal grill in the partition which separates the patient from the mechanism. The column of heated and humidified air is thus made to circulate around the patient about ten times a minute.

The patient's body is entirely free within the chamber, and no electrodes or other electrical gadgets of any kind come in contact with the patient at any time. This is one of the chief advantages of this method of fever therapy over any method that involves diathermy or short-wave radiations, with their electrodes or condenser plates. Another important advantage is the facility with which the patient's skin can be examined, the rectal temperature taken, and all the physical needs of the patient attended to, throughout a session of treatment. This is made possible by sliding panels on each side of the chamber; these can be opened at any time for the supervising physician to examine the patient's skin or for the specially trained nurse to take the patient's temperature, to change the single blanket that covers the patient when it becomes soaked with perspiration, for the introduction of a bed pan, or for any other purpose. Also, in case of emergency, the chamber can be thrown open and the patient withdrawn in a few seconds.

Between December, 1933, and September, 1934, 33 patients suffering from simple urethritis or from urethritis complicated by cervicitis, salpingitis or arthritis were referred for fever therapy. Four cases must be excluded because the patients did not return after the first session of fever or because they failed to cooperate and the idea of treating them had to be abandoned.

Of the 29 remaining patients, 25 received systematic treatment and were cured. The rectal temperature, in these cases, was gradually raised to 106° or 107°F., and maintained at that point for from 3 to 8 hours.

The average number of sessions of fever required to effect a cure was 5.4. The largest number of sessions required was 12, in one case; this was owing to the fact that, during the early sessions, an adequate degree of fever was not attained or was not maintained long enough. The lowest number of sessions of fever required for cure in any case was 3.

ARTHUR U. DESJARDINS, M.D.,
LOUIS G. STUHLER, M.D., and
WALTER C. POPP, M.D.
Rochester, Minn.

*J. A. M. A., Mar. 16, 1935.

Irradiation of the Pituitary in Hyperthyroidism*

SINCE the anatomic structure of the anterior lobe of the pituitary is similar to that of the thyroid, we have irradiated the hyperactive pituitary in the same way we treat a hyperactive thyroid. We treat the thyroid through an anterior and two lateral fields at two-day intervals. In the same way the pituitary is treated through a frontal and two temporal fields. The dose on the skin, as it is in the case of the thyroid, is 200 r. Because of the fact that the thyroid is quite superficial and the pituitary is located at a depth of 7 cm. on the average, and so the effective dose is only about 40 percent of that effective in the skin, the three fields are treated for a second time after eight days. The other treatment factors are 0.5 mm. zinc filter; 30 cm. distance; 170 kilovolts.

*Radiology, May, 1935.

In about 50 percent of the cases irradiation carried out in this way has produced a satisfactory result. There is no doubt that the dose effective in the pituitary is definitely lower than that which is usually effective in the treatment of diseases of the thyroid.

If the basal metabolic rate or the pulse deviate greatly from normal at the end of eight weeks, we repeat the radiation series. We have given a third series only in case of recurrence.

Aside from headache, which occurs now and then on the day of treatment, we have never seen any upset from irradiation of the pituitary. This agrees perfectly with what has happened in the thousands of pituitary treatments which I have given for various reasons to hundreds of patients during the past ten years. This roentgenologic technic is perfectly safe and without any danger whatever.

J. Borak, M.D.

Vienna, Austria.

Look for THE LEISURE HOUR among the advertising pages at the back.

The Elliott Heat Treatment in Pelvic Infections*

THE use of heat in the treatment of diseases of women dates back almost as far as medicine itself. Hippocrates prescribed the vaginal douche and wrote of its efficacy. The modern Elliott heat treatment for pelvic infections I find most efficacious.

The treatment is given in a bed or on a table that is as comfortable as possible. The bladder and rectum should be empty. A speculum is inserted into the vagina and any secretions wiped away. Before the bag is inserted, the vagina and perineum and the bag itself are covered with vaseline and the outlet of the bag covered with cotton. The bag is held in place by a snugly fitting T binder.

The temperature is started at about 115° F. and the pressure within the bag is usually about 1 pound to start with, depending upon the amount of inflammatory tissue in the pelvis. The thermostat is turned on so that the water heats up half a degree per minute and usually 120 degrees is enough for the first treatment. After about 15 minutes, there is relaxation of the tissues, so that more pressure can then be applied. The first treatment usually lasts 30 minutes, the second one 45 minutes and then an hour at a time, with increased pressure and temperature up to 130 degrees. Following the treatment the patient is usually quite relaxed and drowsy and she should be allowed to sleep for an hour.

By means of the Elliott machine, prolonged heat may be applied to the pelvic viscera at a temperature which the skin would not tolerate. By means of the pressure within the bag, distension of the vaginia and adjacent structures is obtained, giving a larger area over which the heat may be applied.

Physiologically the effects are:

1.—A marked hyperemia and increased circulation of the vagina and pelvic organs;

2.—A generalized leukocytosis of about 17 percent, in 87 percent of the patients treated;

3.—An elevation of temperature in the vagina, rectum, bladder and pelvic peritoneal cavity of from 5 to 7 degrees F.

4.—A profuse discharge from the glands of the cervix and vagina.

The work of many investigators has shown that:

1.—The temperature obtained is lethal to the gonococci and these organisms rapidly disappear from the discharge;

2.—That large exudates tend to be absorbed, rapidly;

3.—That pelvic abscesses, in many instances, if treatment is continued, will undergo resolution without drainage;

4.—That acute cases of pelvic inflammatory disease, adequately treated, will very seldom require surgery;

5.—That chronic cases with organized exudates are harder to cure; but treatment is beneficial in these cases, and even when an operation has to be done, the adhesions are sterile, the operation is not so formidable and convalescence is less serious;

6.—In acute cases of salpingitis, before the exudate has become organized, results are uniformly good and operation is seldom necessary.

At the Mayo Clinic, all cases of pelvic inflammatory disease are now treated with the Elliott machine before operation and then beginning again on the fifth postoperative day.

Having tried this treatment quite thoroughly, in practically all types of cases, I believe it to be by far the most logical method we have. The way large masses of exudate disappear under treatment is quite startling.

Despite the bulky apparatus and the time that is consumed in treatment, I firmly believe that all cases of pelvic inflammatory disease should be given a course of treatments before the thought of operation is entertained.

Alec A. Preece, M.D.

Washington, D. C.

*Med. Ann. Dist. Columbia, Feb., 1935.

PROCTOLOGY

ASSOCIATE EDITOR

WILLIAM A. HINCKLE, M.D., Peoria, Ill.

The Injection Treatment of Pruritus Ani and Anal Fissure

By David Maeth, M.D., New York City

THE term pruritus ani, although usually defined as itching, actually includes many sensory disturbances arising in the perianal skin from a variety of local or remote causative factors[1]. These sensory aberrations in the normal dermal sensations vary both qualitatively and quantitatively with the degree of local or distant nerve irritation, and by common usage are included under the general head of pruritus ani.

However, pruritus ani may include sensations of burning, warmth, sticking, feeling of unrest, soreness, pinching, pricking, fullness, etc., all of which may induce scratching. The pathologic processes, both local and general, which result in irritation, either directly or indirectly, in the perianal skin are too numerous to mention, but the sensory disturbances in some cases seem to bear no direct relation to the extent of the pathosis. Skin sensibility is probably quite a variable factor.

For practical purposes the proctologist may divide his pruritic patients into two classes. The first includes those in which a definite local pathologic cause is readily diagnosed and the removal of which usually promptly clears up the pruritus. Such local conditions are frequently accompanied by moisture of the perianal skin, which leads to a mild but persistent dermatitis. The more frequent of these local conditions are: ulcerated or infected hemorrhoids, which may prolapse; enlarged papillae; sinuses; diseased submucous glands; chronically infected fistulae; fissures; chronic proctitis with vermes, polypi, tumors, fungi, etc. Infected crypts must be patiently investigated and the presence of a pecten band (pectenosis) must be established and dealt with accordingly[2].

These conditions respond readily to established proctologic measures, with usual relief of the pruritus.

The second class of pruritic patients, on the other hand, are those intractable cases of long standing which present a difficult therapeutic problem. They have usually exhausted the long list of antipruritic ointments, dilators, lotions, diet changes, medicated soaps, etc., and many of them have had ill-advised x-ray treatment or some modification of the original Ball undercutting operation, with only a brief and temporary respite. Operations of this type should be discarded, as they are fundamentally unsound. The resultant anesthesia is uncertain, and the circulation of the perianal skin is frequently permanently damaged.

It is this class of case which has been greatly benefited and often cured with Anucaine* [3] injections, and we believe the injections of Anucaine should be, at least initially, the method of choice and that they should be repeated several times at definite intervals.

Anucaine is a new oil-soluble anesthetic, devised and used by Gorsch[3]. I have modified his original technic of injection, and further supplement his methods with the excision of oval or racket-shaped areas of perianal skin. The size of these depends somewhat on the severity of the case and the extent of the hypertrophic rugosities of infected skin which characterize so many of these cases. This excision is important and is done primarily to drain the skin as well as the underlyng infected channels and subcutaneous spaces, as emphasized by Hanes,[4] and to mobilize the histiocytes and stimulate the reticulo-endothelial system.

Technic of Injection

As illustrated in the accompanying diagram (Fig. 1), a skin wheal of a 1 percent solution of procaine is raised at a point about 1½ to

*Anucaine consists of five parts each of anesthesin and benzyl alcohol; one part of butesin; and one-eighth part of basic procaine, in sweet almond oil, q.s. 100 parts.—Ed.

2 inches directly lateral to the anus at the outer margin of the pruritic area, which is usually definitely demarcated from the adjacent healthy skin. The ampules of Anucaine, after being warmed (to make the oily solution more fluid) are opened and their contents are aspirated into a dry, 10 cc. Luer-Lok B.D. syringe armed with a needle of large bore or with a fistula cannula which is replaced by a LuerLok B.D. needle, 18 gage, 2 inches long.

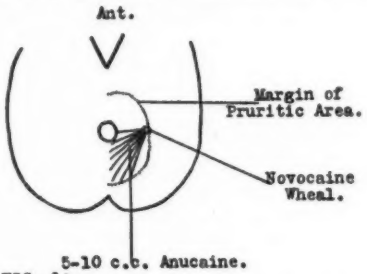

FIG. 1:-
Distribution of Anucaine in the Left Posterior Quadrant of Perianal Skin.

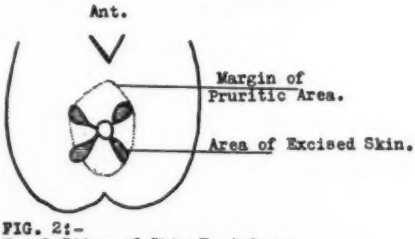

FIG. 2:-
Usual Sites of Skin Excisions; Extensive enough for Adequate Drainage.

The 10 cc. of Anucaine is injected through the lateral wheal of procaine into the subcutaneous tissues of either the posterior or anterior quadrants, 5 cc. or more being used to the quadrant. Both posterior quadrants or one entire side may be injected at the first treatment. Sufficient Anucaine should be used to underlie the entire pruritic tissues and it should be particularly injected below the posterior and anterior raphes, where the itching is apt to be more severe. The needle should be advanced and withdrawn to just below the skin and the injection given in a systematic manner, in order to insure the spreading of the solution evenly into the entire quadrant. I believe that only 10 cc. of Anucaine should be injected at one sitting. However, there seems to be no contraindication to using a greater quantity; Gorsch injects 20 to 35 cc. for operating on hemorrhoids, and has reported no complications of any note in a thousand cases.

The second injection is usually given in from three to five days; and the same area may again be safely injected in seven days, if the relief is not complete, but better not before this lapse of time. In order to obtain good results it is necessary to underlay the entire pruritic area and the injection may be made as deeply as is desired, but never into the skin.

After the Anucaine is injected, oval or racket-shaped areas of skin are excised as shown in Fig. 2. This excision is done with the slow endotherm knife or loop, to minimize the bleeding and at the same time to stimulate local tissue reaction and perhaps also a secondary general or systemic reaction, which may prove of considerable benefit. The wounds are dressed with combined Colo-Jel, which appears to have a decided bacteriostatic action and is soothing.

I believe the excision of the quadrants of skin flaps to be of considerable importance and value, not only in relieving and draining the skin, but also in the prevention of recurrences, which are common enough.

The anesthesia resulting from the Anucaine injection is profound and often lasts for several weeks. Any other indicated minor surgical operation may also be carried out after the injections, such as the excision of hypertrophic papillae, crypts, thrombotic hemorrhoids, etc. The above technic has afforded excellent results and can be carried out in the office or at home.

Fissure

For practical purposes of treatment, the proctologist may divide the subject of fissure into three classes:

First, simple recent fissures, sometimes quite painful, which pathologically are traumatic lacerations of usually chronically infected anal mucosa or crypts. As is well known, they occur more commonly near the posterior midline than elsewhere in the anal canal. In females they are somewhat more frequent in the anterior midline.

Second, a class of fissures which may be termed first-degree, complicated fissures, in which repeated insults to the mucosa have resulted in a chronic ulceration with adjacent fibrosis and hypertrophy of the skin (skin tabs) or a "sentinel pile."

In these two types of fissures the injection of Anucaine is the ideal treatment and invariably results in a cured and grateful patient. The *technic* of the injection is as follows: At a point about one inch posterior to the anus the skin is infiltrated, through the finest hypodermic needle, with 1 cc. of 1 percent procaine solution. This injection should be posterior to the sentinel pile, if one is present.

The LuerLok B.D. syringe is then loaded and prepared, as described under pruritis ani, and the Anucaine is injected on either

side and into the sphincter, and finally directly below the fissure itself, in the posterior midline. Five (5) or more cc. of the Anucaine must be used, and the better the solution is spread out, the better will be the resulting anesthesia and relaxation, which are the important desiderata. The entire posterior tissues should be thoroughly underlaid with the Anucaine, but not pooled. There should be no perceptible bulging of the skin and the Anucaine must not be injected into the skin itself.

Occasionally the fissure may extend well up and even above the internal sphincter muscle; these are the particularly painful types of cases and the Anucaine must be injected below the entire extent of the fissure; that is, as high as it extends. The index finger in the canal facilitates the injection. There are no contraindications as to the depth to which Anucaine may be injected. I have seen it injected around the pudendal nerve, into the levatores ani and coccygei muscles, with no harmful results of any kind. These latter, deeper injections are made for the relaxation, in those cases where excessive spasm is present and which may be very painful.

The pathosis to which the fissure owes its persistence must be eradicated at the time of the injection. If the skin anesthesia is not perfect, then additional procaine solution should be injected directly into the skin.

I have found the simplest method of removing skin tabs, crypts, enlarged papillae, etc., to be with the slow endotherm knife or loop. The suction electrode recently devised by Gorsch is very useful for all such proctologic procedures, since it gives one a constant clear vision through any type of anoscope or proctoscope of any length, the electrode being adjustable, and it is usable on any type of diathermy machine. The delay in healing which follows the slow endotherm burn is advantageous in prolonging the drainage and securing firm ultimate anal scarring.

The injection of Anucaine has almost entirely eliminated the necessity for surgical intervention with incision of the sphincters and protracted healing of this type of fissure. The technic is simple and can be carried out in the office with no shock and a minimum of after-pain.

Third, a class of fissures in which protracted ulceration and trauma have led to burrowing infection in the socalled posterior triangular space between the sphincters, with fistula formation of various depths and ramifications. They are the far-advanced type of the first-degree, complicated fissure. Although Anucaine injections may be used with some benefit in this type of case, I believe that their ultimate cure often necessitates a posterior drainage incision, as advocated by Gabriel[5]. The scar tissues, which interfere with the proper sphincteric action, must be excised, and the sinuses, which sometimes branch for a considerable distance laterally, must be removed and properly drained. In this type of case the injection of Anucaine will give immediate relief and relaxation and admit of a thorough and careful instrumental examination. Radical measures may be instituted at any subsequent time.

Anucaine injections in pruritus, and particularly in fissure, have been found to be superior to anything I have used. The method is simple, satisfactory and approved. There are no complications, such as sloughing and oil tumefaction, no general reactions, no severe pain and no local tissue damage of any kind. The injections may be repeated as often as desired, without any harm. It is decidedly superior to injections of alcohol, Nupercaine, distilled water, acids, phenol and many other chemical combinations, which cause excessive pain and may leave the tissues permanently damaged.

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56 East 87th Street.

NOTES AND ABSTRACTS

Office Treatment of Rectal Diseases*

THERE exists an intimate relationship between rectal and colonic diseases that invites our closest attention. This necessitates the recognition of the proper treatment of rectal disease in order to obtain the greatest relief in any physiologic abnormality of the colon. It is observed that spastic and mucous colitis not infrequently are relieved, or the symptoms very materially benefited, by removing rectal abnormalities and re-establishing the proper musculo-nervous relationship between the different parts of the intestinal

*Ind. St. M. A. J., Jan., 1934.

canal. The results are so gratifying in successful cases, and the health and well-being of the patient so much improved, that few therapeutic measures are rewarded with greater satisfaction. If a doctor exercises judgment in the proper selection of cases, and is familiar with the physiology and anatomy of this region, there is no field in medicine that gives more satisfactory results than the treatment of rectal diseases.

Rectal lesions play a very important part in the physiologic relationship of the rectum and the colon. A dysfunctioning colon or spastic colitis should be properly interpreted by the diagnostician, who should determine the probable systemic effect that may take place from improper elimination. If the minor cases of rectal diseases can be properly managed without confinement, the proctologist will have played an important part in helping to restore to health many invalid patients, who otherwise would continue to carry their troubles with them.

W. A. H.

Look for FACTS AND COMMENTS among the advertising pages at the back.

Dietetic Treatment of the Spastic Colon*

THE diet in spastic colon should be comparatively nonputrefactive; that is, uninviting to saprophytic bacterial activity in the intestines. The practical application of this principle requires, broadly, that the animal protein of the diet be supplied rather from milk and eggs than from animal flesh.

Fats have an important place in this diet. Butter and olive oil are among the preferred fat foods. Olive oil is often advantageously taken at night, especially when there is constipation, the patient lying on his right side for a short time after taking the oil in order to facilitate its passage into the intestine.

Cereals belong in this diet, especially those with a small content of cellulose, such as cream of wheat. White bread is suitable, but whole-wheat bread and bran are forbidden.

Fruits are of great value in this diet, but they must be selected with due reference to their content of cellulose, sugar and acids, as well as their special qualities. Perhaps the first place among fruits in this diet should be given to the banana. Among the fruits generally found useful, in addition to the banana, may be mentioned oranges, grapefruit (the strained juice being used), baked apple without the skin, and ripe peaches, either raw or stewed.

Green vegetables of the leafy type belong in this diet, if strained after cooking, so as to rid them of disturbing fiber. Roots with much fiber, such as the carrot, should be mashed and strained.

The sugars, except as occurring in fruits and milk, are not of very great value in this diet, although they may sometimes be used with advantage in weak solutions. The best form in which to take sugar is in strained fruit juices and milk.

Water is generally of value, though there are not generally present indications for special or excessive use of water. Beverages containing caffeine are generally contraindicated; those containing carbonic acid may sometimes be allowed. Spices are forbidden. Table salt should be kept within moderate limits.

All foods should be taken comfortably hot, or cool enough to be palatable, but never very cold.

EDWARD E. CORNWALL, M.D., F.A.C.P.
Brooklyn, N. Y.

Med. Times, October, 1934.

Cancer of the Rectum

THE diagnosis of cancer of the rectum is not unduly difficult, *if the condition is thought of*. Changes in the bowel function, discharges of pus and blood, and a sensation of abdominal discomfort should arouse suspicion and demand a proctoscopic examination and x-ray study after a barium enema.—DR. RICHARD B. CATTELL, Lahey Clinic, Boston, Mass.

Tuberculous Fistulae

CLEMENT L. MARTIN says (in *Trans. Am. Proct. Soc.*, 1933): "A fistula is considered grossly tuberculous when the skin orifice is large or gapping, the edges undermined and cyanotic and the tract is much more patulous ('eaten out') than in the ordinary type." To these characteristics the Editor would add, absence of induration around the tract.—W. A. H.

IT IS MORE BLESSED TO GIVE THAN TO RECEIVE

If you have had unusually good results in the treatment of pruritus ani, will you write the Editor of this Department at once, giving in brief detail your method, technic or prescription, that we may pass it on to the profession?—W. A. H.

A LIVING FOR THE DOCTOR

(The BUSINESS of Medicine)

●

The Education of the Family Doctor

By N. S. Davis, III, A.B., M.D., F.A.C.P., Chicago, Ill.

ONE hundred years ago he who wished to become a doctor of medicine, after attending a district and possibly a secondary school, commenced the study of his profession under a preceptor who was a general practitioner engaged in family practice. In those days a general practitioner was a master of all fields of medical practice. Today he can be only a jack of all and master of none. Under the direction of the preceptor the student read medicine, studied anatomy, materia medica and botany, obstetrics and minor and emergency surgery. He attended the same course of lectures in a medical school for two terms of three months each. Between them he continued to study under his preceptor. In this way he acquired what today would be considered a most rudimentary and superficial knowledge of the science, but much more of the art of medicine.

The old-time general practitioner is still idolized; not because he cared for all diseases, medical and surgical; not because of his scientific attainments; not because of what little he knew about the disease the patient had, but because of what he knew about the patient who had the disease—because he was a *specialist in the field of family practice.*

Beginnings of Specialism

In this country specialism, in the modern sense, really had its inception about one hundred years ago, when two physicians, who were refused chairs of dental surgery in a medical school, started a school of dentistry. This complete separation of one specialty of medicine from the medical course proved most detrimental both to medicine and to the specialty. The dentist became a technician, who extracted teeth, crowned teeth and filled cavities, but paid little if any attention to the general systemic cause or results of dental disorders. Similarly the physician, who relegated the care of the teeth to the dentist, failed to appreciate the connection between dental disorders and systemic disease. It is only during the past twenty-five years or so that the teeth have again come to be considered an important integral part of the body.

Specialism in other fields developed a little later. In the 1850's, the movement for special sections devoted to internal medicine, surgery, obstetrics and so forth, to replace the general sessions of the American Medical Association, had its inception. Instruction in the medical schools of that period was given by men engaged in family practice. However, anatomy and surgery were, as a rule, taught by those who were especially interested in surgery; physiology, chemistry, materia medica, pathology and medicine, by those especially interested in internal medicine; midwifery and pediatrics by those interested in obstetrics. The physicians became more and more interested in the scientific aspects of medicine; the courses in the medical schools were lengthened and graded; the preceptorship was eliminated. With the advent of cellular pathology, anesthetics, bacteriology, experimental physiology, asepsis and antisepsis, medical knowledge increased by leaps and bounds.

In the education of the physician we are today giving a good general background in the preclinical sciences and a smattering in the specialties from the viewpoint of the specialist; we are turning out general specialists, who often enter general practice and undertake the medical or operative treatment of any or all of the conditions to which man is susceptible. With the elimination of the preceptorship the *art* of medical practice has almost been eliminated from the medical curriculum. The required interneship was introduced to replace this and to give the student a closer contact with patients, but on the rotating service required by many states, the interne does not learn much of the art, as he has many attending men, each for a short period; if he has a service in a charity hospital he learns even less of this most important subject, as he does not see how the attending physicians handle private patients.

Suggested Courses of Action

During the past few years, it has been suggested that the medical course is too long—that a shorter course should be developed that would turn out men who could afford to practice in rural districts, even if they were

less adequately prepared. This proposal for the furnishing of second-rate medical service to any portion of the population is not to be considered.

Certain sociologists feel that medical service should be furnished only by organized clinics, in which all examinations would be made by specialists and in which the costs of unit service could be cut because of the large volume of work done. Some theoretical medical educators sustain them by promoting schools of medicine that, through full-time clinical teachers, engage in the general practice of medicine and by so doing train students for organized group and not for private practice.

If the problems that today beset the medical profession and those citizens of the United States who may be sick in mind or body, are to be satisfactorily solved we should take stock and then mend our ways so as to correct the situation. During the past century, the science of medicine has progressed at a tremendous rate, but the art has been neglected. One hundred years ago we were educating general practitioners who knew little of the science but much of the art of medical practice, who really became specialists in family practice. Today we are educating general specialists who know much of the fundamental sciences, have a smattering of the clinical sciences and know almost nothing of the art of medical practice; who become general or limited specialists and not family doctors; who know much more about the disease the patient has but much less about the patient who has the disease.

Has not the time come when we should forget the general practitioner and cease to educate general specialists? Should we not reform the medical curriculum, so that it is directed to the education of the family doctor?

Family Doctor, 1935

The family doctor of the twentieth century should be well grounded in the fundamental sciences; should be an able diagnostician in all fields of medicine and able to care for the eighty-five percent of all illness that does not require the service of the specialist in a limited field; should know that, when surgical or other special therapy is indicated, the services of qualified specialists should be obtained; should thoroughly understand and fully appreciate preventive medicine and its practice. He need not know the technical procedures of surgical therapy, except first aid, but must know what surgical therapy can accomplish and when it is indicated. Similarly he need not know all of the technical and special methods that may be used in diagnosing and treating all of the diseases classed under the medical specialties. The medical course should be lengthened to a forty-eight week school year, that the student might, in addition to his one-year interneship, serve for one year under a preceptor who was engaged in private and preferably family practice, and yet not increase the number of calendar years spent in obtaining his degree of doctor of medicine.

Most of those completing such a course would naturally engage in family practice, *which should be considered the fundamental specialty.* A few would, through association with preceptors who were specialists in a limited field or by other methods, continue their studies and become qualified to practice in such a field. They would thus become qualified as therapists skilled in the diagnosis of those diseases for whose treatment they had received special training.

It is possible that, in urban and metropolitan communities, group practice would be more economical than individual practice. If this should prove to be the case, the group should be composed of physicians specializing in family practice, plus other qualified specialists needed to give proper treatment to their patients. The family doctors might work as individuals, who regularly referred patients needing special treatment to an organized or unorganized group of consultants working in the hospital with which they were connected. These are details, but it does appear that if there is to be group practice it should be on a partnership and not on a corporate basis. In a partnership the direct relation between physician and patient is not lost to the extent it is when a corporation intervenes.

It seems then that medical education should be reformed; that the education of the general specialist should be replaced by the education of the family doctor; that specialism in a limited field of practice should be restricted to those who, as a result of additional experience, education and training, have become qualified for such practice.

In this connection Sir William Osler once said: "May this (family practice) be the destiny of a large majority of you! Have no higher ambition! You cannot reach any better position in the community; the family doctor is the man behind the gun, who does our effective work. That his life is hard and exacting; that he is underpaid and overworked; that he has but little time for study and less for recreation—these are the blows that may give finer temper to his steel and bring out the nobler elements in his character."

Should not every effort be made to revivify this most important but unrecognized and almost forgotten specialty? Until specific therapy has advanced much further, symptomatic therapy will continue to be of great importance in the treatment of disease. As

long as this is true, if treatment is to be effective, it will be necessary to know at least as much about the patient who has the disease as about the disease the patient has. The clinic physician, even with the help of the medical social worker, or the specialist in a limited field, who sometimes considers only his field and neglects all others, can rarely know the patient as does the family doctor.

It will be difficult for impersonal clinics or consulting specialists in limited fields of practice to learn about the onset, early course and cause of such chronic conditions as diabetes, arteriosclerosis, arteriolosclerosis and cancer, for as a rule they see the patient only when the disease is fully established. The family doctor who is well trained in the pre-clinical sciences, who is a careful observer and able clinician, who follows patients from youth to old age and who knows their family history and their living conditions, social, economic and medical, is the one most apt to solve these increasingly important and perplexing problems of the chronic diseases whose incidence is highest in those over forty-five years of age.

A Solution

How can the family doctor be returned to the position he held of yore?

1.—By recognizing his field of practice as the *fundamental specialty*. Other specialists should serve as his assistants in the solving of perplexing problems or in the treatment of particular conditions.

2.—By altering the curriculums of our medical schools so that the graduate will have been educated not, as formerly, as a general practitioner, nor, as at present, as a general specialist, but as a *specialist in family practice*—a family doctor.

3.—By convincing the public that the family doctor is not just a corner doctor—an inconsequential jack of all trades—but the cultivated practitioner of a fundamental specialty who, by the prescription of diets, modes of life, medicines or *the services of qualified specialists*, can furnish to his patients the best of medical service.

700 N. Michigan Ave.

NOTES AND ABSTRACTS

What Is The Law?

TO understand the legal aspects of birth control is one of the first concerns of groups who wish to start a contraceptive clinic or to refer mothers to existing clinics. The experience of national and state birth control organizations shows that local clinics now need fear no interference with their work, when it has the support of a large group of respected citizens and is directed by licensed physicians.

Except in Connecticut, Mississippi, and Pennsylvania, birth control clinics are legal, as neither the practice of contraception nor the giving of contraceptive advice by physicians is prohibited. The federal laws prohibit the importing, or sending by mail and common carrier within the country, of birth control information and supplies with no exemptions whatever. These laws have, however, been interpreted with commendable liberality and at no time, as far as we know, has any center encountered difficulty in receiving supplies.

The bill which the National Committee on Federal Legislation for Birth Control is sponsoring under the chairmanship of Margaret Sanger, and which the American Birth Control League has endorsed, would incorporate into the text of the laws the important exemption of physicians, manufacturers, and drug stores, both for importation and for transportation within the United States. The enactment of this bill, inasmuch as it would insure such exemption, whatever the inclination of future postal authorities, is highly desirable.—*Birth Control Review*, May, 1935.

The Size of the Dose

WHEN we entered the War, we built more factories, scattered money like simpletons, produced more and more goods to waste.

Then the War ended and panic threatened. We had enormous surpluses and no market for them. Europe's soldiers had gone back to work; they were able to supply themselves.

Sanity urged that we get back to normal, but the wild extravagance of a bogus prosperity had spoiled us, and in order to keep it up a little longer, we committed the greatest folly in history—we loaned the world our savings to persuade it to keep on buying from us. That is, we continued to produce more than the world needed, gave it away, and used our own money to pay ourselves.

Then the idiotic scheme ended in a gambling orgy and wreckage and we began to pay for our sins. And still there are millions who expect a return of boom times as soon as somebody thinks up the right law!

Well, they are asking for disappointment.

We shall not return to boom times. We shall not even return to the normal times of 1913. Conditions have changed, for all time to come.

The extra factories are junk, for the world is supplying its own needs.

Part of our foreign market is gone forever, for Japan has new factories that can undersell us.

Part of our wheat market is gone, for other nations have learned to grow their own wheat.

Most of our cotton market is gone, for other lands are growing more than we are and producing it at less cost.

We must junk our surplus means of production and reduce our output to match our own needs. Soon or late, as sure as a gun's iron, we must adjust ourselves to hard facts. We can postpone it, as we did before, by going deeper in debt and spending borrowed money to make a temporary artificial prosperity, but the longer we postpone taking our medicine, the bigger the dose will grow.

ROBERT QUILLEN.

Fountain Inn, S. C.

CLINICAL MEDICINE AND SURGERY has been my partner in business for 35 to 40 years. As a country firm we have made good, professionally and financially.—W. C., M.D., Tenn.

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Backward or Forward?

NATION'S BUSINESS, in a recent answer to a charge by a high government official that "we are a backward country, twenty-five years behind Germany in health insurance," quotes the following interesting facts from the committee report of the Washington Board of Trade:

"Health insurance has not lowered the mortality rate in countries which have adopted it; it has not lowered the sickness rate; it has not decreased the total cost of medical care, but has in reality increased it, owing to the large administrative staff and the high degree of political control inevitable in computing any health insurance.

"The committee suggests that the patient's free choice of a physician and the personal relationship are nullified through the impersonality of government administration."

To which we add, let us make haste slowly in the matter of health reforms.—*Patchwork.*

BOOKS

Christie: Medical Economics

ECONOMIC PROBLEMS OF MEDICINE. *By A. C. Christie, M.S., M.D., Professor of Clinical Radiology, Georgetown University Medical School; President, Fifth International Congress of Radiology; Formerly President of the Medical Society of the District of Columbia, The American Roentgen Ray Society, The American College of Radiology and Member of the Committee on the Costs of Medical Care. New York: The Macmillan Company. 1935. Price, $2.00.*

To be of value, history, statistics and past experiences must be examined and studied in every detail. This is true not only of the whole of any given subject, but also of the different aspects of and pertaining to the whole. Unless the reasons why and how such factors occur as they do are deduced, the facts themselves are valueless in any attempt to point out mistakes in the past or in the matter of paving the way to a better future. The analyzed results must then be re-examined as to the result, in their relation to every other existing influence which might have bearing on the subject matter, in however a remote fashion.

In a field so large in scope as is the profession of medicine, and affecting as it does the total of all individuals in society, one must, if one wishes to arrive at a fairly accurate understanding of the past, present and future trend of the profession, acquaint himself with all sides of the problem. One side of this problem is presented to us by the author in this book; that side pertaining to the profession as seen by an individual member. Rather raw and undigested material, in the form of statistics, is relied upon, for the most part, by Dr. Christie in presenting his views on the economic aspects of medical education, organization and practice, as it has developed and is developing. The American Medical Association is freely discussed, in relation to its effect within and outside of the profession. Health insurance, industrial insurance, group practice and other modern trends and experiments are described and some attempt is made to analyze them. The book may be justified by the fact that it is one fraction of the whole problem, fairly presented, and is worth reading by anyone who truly desires to understand the present economic system and the possible changes which are occurring in it.

J. R. C.

CREDIT

A credit is a credit, and, no matter what rigmarole may be gone through, it either has to be paid or not paid. The day of reckoning can be postponed but it cannot be abolished.—SAMUEL CROWTHER, in "*America Self-Contained.*"

THE SEMINAR

"A MONTHLY POSTGRADUATE COURSE"

(NOTE: Our readers are cordially invited to submit fully worked up problems to the Seminar and to take part in the discussion of any or all problems submitted.

Discussions should reach this office not later than the 5th of the month following the appearance of the problem.

Address all communications intended for this department to The Seminar, care CLINICAL MEDICINE AND SURGERY, Waukegan, Ill.)

Problem No. 6 (Medical)

Presented by Dr. F. H. Rhoades, Hanover, Kans.

(See CLIN. MED. & SURG., June, 1935, p. 301)

RECAPITULATION: A strong, 20-year-old girl suddenly developed diarrhea and abdominal cramps on July 2, 1933. She was having 10 to 15 stools a day.

The clinical picture was that of typhoid and the fever continued for six weeks, though the Widal test was negative. She had four intestinal hemorrhages and ulcers in the mouth.

After her temperature had been normal for several weeks and she was up and about, the fever and abdominal distention returned, and on October 11 she had a chill, temperature of 103°F. and developed a left-femoral phlebitis, When this subsided, she still had abdominal distention, constant moderate fever and diarrhea.

Laboratory examinations: Stools showed a few pus cells, but no blood, parasites nor ova. The *blood* showed a negative Wassermann test; red cells 2,390,000; leukocytes from 5,300 to 10,400; hemoglobin, 55 percent.

Requirements: Suggest diagnosis and treatment, giving reasons. What further studies, if any, should be made to clear up the diagnosis?

Discussion by Dr. O. B. Simon, Batavia, Ill.

This case, I believe, is one of typhoid fever with relapse, complicated by thrombophlebitis of the left femoral or saphenous vein. The presentation is somewhat indefinite; it does not state when the stool and blood examinations were made nor how often.

However, it is not rare that typhoid fever will give negative Widal tests and negative stool and urine cultures, especially in the first two or three weeks of the disease. But later on, and even after the termination of the illness if the proper media are used and the tests repeated, it should not be so difficult to find the typhoid bacilli in the stool and perhaps in the urine. The Widal test becomes more positive later in the course of the disease, and even afterward it may be positive for months or years.

The complications mentioned are fairly common to typhoid fever; viz., the hemorrhages, the mouth ulcers, the relapses, and the thrombophlebitis.

The patient is spoken of as a strong, healthy woman of twenty. According to McDonagh, this type of woman is apt to be *hydrated*, especially if she has scanty menses or amenorrhea; and if she becomes pregnant, her gestation period is uneventful but she is apt to have much difficulty after delivery, such as postpuerperal eclampsia, late hemorrhages or thrombophlebitis. This, he states, is due to the cyclic dehydration of the hydrated colloids in the blood plasma, brought about by the effects of the childbirth. Similarly the dehydration of the colloids occurring in severe illnesses, such as pneumonia and typhoid fever, are apt to cause thrombosis.

It would be rather difficult to handle the relapse and complications of this case along ordinary lines. In situations like this case, I find the methods of McDonagh very helpful. The blood chemistry and other findings would indicate the necessary treatment, according to the predominance of the hydration or dehydration. A combination of hydrators and conductors, such as insulin, aspirin and oxygen subcutaneously or neoarsphenamine, SUP 36, SUP 468, tonics of iron, quinine, strychnine, etc., would probably be indicated, to check the lysis or dehydration responsible for the thrombosis. Retention enemas of potassium permanganate or sodium bicarbonate are also beneficial in the dehydration (lysis) phases.

Remedies like dextrose, intravenously, and digitalis are harmful and *contraindicated* where dehydration is the dominant phase in the colloid metabolism. I do not hesitate to state that these two drugs are more often wrongly prescribed and do more harm than any other drugs at our disposal.

Discussion by Dr. E. C. Junger, Soldier, Ia.

In Problem No. 6, Dr. Rhoades gives us rather limited material to work on. Typhoid fever hardly starts so suddenly. Cramps with no fever mean an irritation of the intestinal mucosa, chemical or mechanical, hardly bacterial.

The principal symptom is cramps, then diarrhea—a colitis which, after being irritated for some time, became inflamed and the seat of infection by colon bacilli and yeast fungi or amebae of dysentery. Ptosis of the colon or a long sigmoid produces conditions favoring fecal stasis, hardening of the bowel contents and a tendency to ulceration. The female pelvis, with a displaced uterus, inflamed tubes or fibroids, also affects the large bowel and indirectly mechanically causes diarrhea, constipation and ulcerations.

A gastro-intestinal series of roentgenograms should be made, and a pelvic examination, to eliminate pathoses of the female reproductive organs. Eliminate amebic or bacillary dysentery and liver abscess due to the ameba. Trichinosis should also be kept in mind.

Discussion by Dr. G. M. Russell, Billings, Mont.

For differential diagnosis I should consider:

1.—Undulant fever.
2.—Typhoid fever.
3.—Tuberculosis.
4.—Subacute pyogenic septicemia.

The negative Widal test rules out typhoid.

Tuberculosis was not demonstrated.

Septicemia should have been checked by blood culture.

I would want an agglutination test with *Micrococcus melitensis*, which I believe would have been positive.

My diagnosis is, *undulant fever.*

Treatment: That of typhoid fever, possibly with intravenous injections of 10 to 50 cc. of a ½ percent solution of neutral acriflavine, or autogenous or stock vaccines, at intervals of three to seven days for three or more doses; also the oral and rectal administration of methyl violet and whole blood transfusion.

Discussion by Dr. Geo. B. Lake, Waukegan, Ill.*

The general picture here presented resembles that of sprue, in spite of the lack of several notable symptoms in the report and the fact that there is no history that the patient had lived in the tropics. The continued fever, abdominal distress and diarrhea, sore mouth and the blood picture, point in this direction.

To clear up the diagnosis, we should need a full report of a gastric analysis; repeated blood studies; a much more detailed and repeated report on the stools; and a record of the patient's weight, from month to month.

It should not be forgotten that sprue, in its later stages, closely resembles pernicious anemia, and the two conditions may be allied. The high hemoglobin index (1.14) suggests the presence of a primary anemia. The marked difference in the leukocyte counts suggests the presence of an infection somewhere.

On the basis of this report, I should at once begin the intensive administration of liver extract—intravenously at first, until there was a marked increase in the red cells, with the appearance of reticulocytes, and then by mouth. I should also give several intravenous injections of 10 cc. of dilute hydrochloric acid (1:1,500 or 1:1,000), on general principles, and follow this up according to the progress of the case. A sprue diet also seems to be indicated, unless or until this condition can be ruled out.

Closing Comments by Dr. Rhoades

After submitting this problem (in February, 1934) and before I could start using the suggestions made by Dr. Lake, this patient's red cells went down to 1,500,000 and her hemoglobin to 37 percent (color index 1.23). On leaving the hospital, in a desperate condition, March 4, 1934, she weighed 83 pounds.

She could not eat raw liver and retain it, and after eating cooked liver a few times, her stomach rebelled against it. I therefore gave her Squibbs autolized liver extract by mouth, in full doses, with 2 cc. of Breon's concentrated liver extract, intramuscularly, every other day. In addition, I gave her 15 to 30 drops of dilute hydrochloric acid, well diluted, by mouth after meals, and full doses of Upjohn's Jeculin.

By the middle of September, 1934, she weighed 118 pounds and her red-cell count was 4,200,000. Her appetite was excellent and all her abdominal symptoms and digestive disturbances had disappeared. The only abnormalities were a slight presystolic heart murmur, slight swelling of the feet and ankles when she stood too long and a waxy whiteness of the skin of her body and limbs.

From that time on she has been taking capsules of liver extract (Abbott) regularly and has been able to eat cooked liver twice a day. For several months she has been working, without difficulty, as a cook and general housemaid, and in June, 1935, told me that she feels entirely well. She weighed 138 pounds.

On April 26, 1935, her red-cell count was 3,900,000, with no abnormal cells; hemoglobin, 83 percent; leukocytes, 5,200, with 44 percent polymorphonuclears, 12 large mononuclears, 42 lymphocytes and 2 percent eosinophiles; color index, 1.08. On the same date a gastric analysis, after a test meal, showed: After ½ hour, free HCl, 0, total acid, 32°; after 1 hour, free HCl, 14°, total acid 38°; after 2 hours, free HCl, 40°, total acid 55°.

*This is a synopsis of the suggestions made to Dr. Rhoades when the case report was received, in February, 1934.

To sum up the case: For 11 months this patient was desperately ill, so that her condition seemed hopeless; for 12 months there has been a steady and sometimes rapid improvement until, under treatment, she feels entirely well and is leading a normal life. This has been one of my most satisfying cases.

Problem No. 8 (Medical)

Presented by Dr. C. H. Kennedy, Fort Smith, Ark.

THE patient, a boy of four years, lived in a hut on the river bank. When first seen, Oct. 15, 1934, his mother lay dead, due to "cerebral hemorrhage," according to the attending physician.

Chief complaint, pain in the occiput, neck and spine (cephalic cry, "O, my head! O, my head!").

The pupils were dilated, but reacted to light equally; tongue heavily coated, dry and brown; slight throat irritation; some tympanites; some nausea and vomiting; skin clear and no glandular enlargements; knee jerks, exaggerated; temperature, 102°F. (axillary); pulse, 160. The tentative diagnosis was *encephalitis.*

Oct. 16, all symptoms were more marked and Kernig's sign (leg cannot be completely extended when the thigh is flexed on the abdomen) was present. The head was drawn back, but not in opisthotonus.

The diagnosis was changed to *meningitis* and a spinal puncture was done, under general anesthesia (chloroform). The spinal fluid was cloudy and under strong pressure (spurted a foot when the stylet was withdrawn). Through the same needle, 10 cc. of antimeningococcus serum were injected. On Oct. 17, the laboratory reported that the spinal fluid contained many pus cells, but *no bacteria.*

The urine was reddish-brown; specific gravity, 1.020; acid; albumin, 4 plus; no casts.

By Oct. 20 the condition was somewhat improved and the head symptoms partially relieved; but a severe sciatic neuritis developed on the right side, and lasted for several days.

On Oct. 24, the boy had a severe chill, followed by an axillary temperature of 104°F., but without a return of the severe head symptoms. Next day he felt much better and his temperature (all these readings were taken in the axilla) was 101°F.

On Oct. 26, he had another severe chill, followed by a fever to 105°F., with extreme nervousness but no head symptoms; but the next day he felt much better again. On Nov. 1 and 3 the boy had temperatures from 101° to 102°F., with severe frontal headaches. Transillumination showed the frontal sinuses clear.

Owing to the circumstances in this case, no other laboratory work than that here reported was done, and the management of the condition had to be directed largely by the clinical symptoms.

Requirement: Suggest diagnosis and treatment, giving reasons.

GET THE SEMINAR HABIT

I want to urge every reader of CLINICAL MEDICINE AND SURGERY (which is the most practical medical journal a general practitioner can read), whether he be young or old, to take part in the *Seminar* (which is a real postgraduate course), regularly and systematically. Those who do so and make correct diagnoses will get a kick out of it similar to that from playing a hole in one; winning a game of contract; or excelling in any other sport or hobby. A good job well done is its own reward.—DR. E. C. JUNGER, Soldier, Ia.

SOCIALISTS AND BANKERS

Grouping bankers and socialists together as, to be elegant, the morticians of an era, is in no sense cynical but is a plain statement of fact, for both classes or sects think exactly alike. It is only their conclusions that differ. Each has a childlike belief in the permanent value of bricks and mortar and the preserving of things as they are—the one for the benefit of investors and the other for the benefit of everyone. For the moment, the socialists have become advocates of planned economy.—SAMUEL CROWTHER, in *"America Self-Contained."*

CLINICAL NOTES and ABSTRACTS

The "Black Widow" Spider

THE "black widow" spider (*Latrodectus mactans*) appears to be the most dangerously poisonous arachnid in the United States, and its numbers and the spread of its distribution are far greater than most people have realized. It is fairly common throughout the South and West, and has been found in almost all parts of the country. The common name is derived from its color and the fact that the female eats the male (which seems to be harmless) immediately after mating.

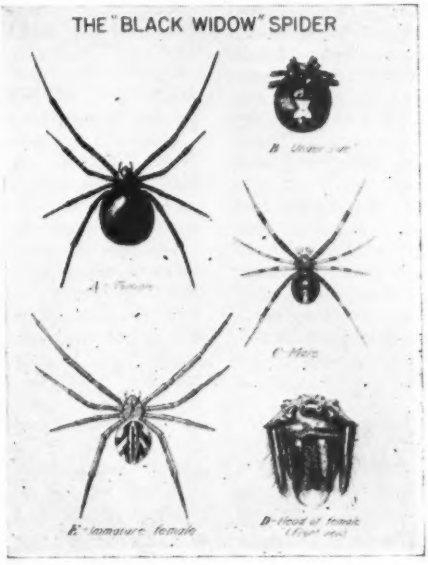

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Fig. 1.—(A) Female; (B) Under Side; (C) Male; (D) Head of Female (Front View); (E) Immature Female.

All physicians should be familiar with the appearance and habits of this spider, so that they can inform their patients and friends, and with the diagnosis and treatment of the bites.

The "black widow" is a large, spherical, shiny, black spider (the entire body is about ½ inch long), with long slender legs. On the ventral side of the abdomen is a red or yellowish-red spot, shaped like an hour-glass; there are usually one or more red dots on the dorsal surface also. The accompanying picture shows the appearances very well.

This spider is usually found in refuse heaps and in stables and out-buildings, especially privies, but occasionally comes into houses, even in cities. It is largely nocturnal and is not aggressive, rarely biting unless disturbed. Its web is so tough that it cannot be broken with an ordinary straw.

From a prophylactic standpoint, the important thing is the frequent and thorough cleaning up of privies, basements, woodsheds, and all places that have dark, damp corners and recesses, so as to destroy the favorite breeding places, and the destruction of the adult spiders whenever they are encountered.

The poison of the "black widow" is a toxalbumin and its effect is quantitative with regard to the amount injected, the location of the bite and the weight of the victim. There is no record of a death of a bitten adult, except a few who were under the influence of alcohol, either before or after the bite (*this is of importance!*), but several small children have died of such bites.

In diagnosis, the history of being bitten by one of these spiders is of the greatest importance, as without such a history, confusion may readily arise, with more or less serious results.

Most of the patients are adult males, who have been bitten on the genitals while sitting in an outdoor privy, but this is by no means always the case and full details should be brought out in every case.

The symptoms of a typical case of arachnidism are: pain and swelling at the site of the injury, with pain throughout the body, especially in the extremities, which become cramped and spastic. This is soon followed by pain, tenderness and rigidity (sometimes almost board-like) over the entire abdomen, with nausea, vomiting, headache, dizziness, anxiety, ringing in the ears and a marked increase in blood pressure—sometimes as much as 35 or 40 millimeters of mercury. Children may go into eclamptic convulsions, which are hard to control. Cases have been mistaken for ruptured peptic ulcer or other acute abdominal condition and might be operated upon. There is, however, no shock, the temperature and pulse are normal, and

the slight leukocytosis is of no great significance.

The main feature of treatment is the administration of *sedatives*, carefully avoiding alcohol and strychnine.

The patient is put to bed and iodine is applied to the site of the bite. The bowels are opened by a soapsuds enema and water is given freely. Morphine sulphate is given hypodermically and a barbituric hypnotic (Nembutal, Amytal, Luminal, etc.), to secure rest. The most important procedure is, perhaps, the intravenous injection of 20 cc. of a 10-percent, sterile solution of magnesium sulphate (that marketed in ampules is best), repeated as often as is necessary to overcome hypertension and spasticity of the muscles.

This outline of the subject should be sufficient for most purposes, but those who desire further information will find a good article on the subject, by Frawley and Ginsburg, in *J. A. M. A.* for May 18, 1935, page 1790, and some helpful notes in *New Orleans M. & S. Journ.* for June, 1935, third cover page.

I shall be glad to receive full reports from any physicians who have occasion to treat the bites of "black widow" spiders, with details of the treatment used and the results obtained, and to pass this information on to others as opportunities arise for doing so.

GEORGE B. LAKE, M.D.

Waukegan, Ill.

Preventing Plaster-of-Paris from Injuring the Ankle*

IT is sometimes necessary to apply circular plaster casts from the groin to the ankle, in order to immobilize the knee joint. After a few days the plaster tends to become loose and, when the patient walks, to slip downward. As a result it presses on the ankle and sometimes on the heel, thus becoming uncomfortable, and often bruising or even cutting the skin.

I have found that such injury can be avoided by the simple expedient of properly padding the distal end of the plaster with felt.

First a well-fitting stockinette is applied to the skin. The stockinette is somewhat longer at each end than we plan to make the plaster.

Then the felt is applied. This should be ¼ inch thick, 5 inches wide and long enough to encircle the patient's leg just above the malleoli. The felt is cut in four places half way through its width. It is placed around the patient's ankle, over the stockinette, the half with the cuts at the distal end, and held in place with adhesive tape.

Sheet wadding is then applied as a pad over the leg and thigh. Plaster-of-Paris is next put on, leaving the cut half of the felt uncovered. This cut, uncovered half of the felt is folded back over the end of the plaster. The stockinette is then folded back and a few turns of plaster-of-Paris applied to hold it and the felt in place. Thus a felt pad entirely encircles the leg at the ankle between the plaster and the skin.

By this addition of a small piece of felt to the equipment used in immobilizing the knee joint, the plaster at the ankle is made less uncomfortable than usual and injury to the skin is avoided.

CHARLES HAINES, M.D.

New York City.

*A. J. of Surg., Mar., 1935.

The Advertisements are NEWS! Read and use them.

Varicose Veins*

IT has been some time since the injection treatment of varicose veins has become standardized routine. All cases may be arbitrarily classified into one or more of the following groups: (1) simple; (2) extensive; and (3) complicated varicosities.

The simple varicosities are the spider-like clusters, which usually appear on the thigh and are readily obliterated by careful injection with sodium morrhuate, using a very fine hypodermic needle. The extensive type are either unilateral or bilateral, and present valvular insufficiencies, usually along the short saphenous vein. The last group comprises those in whom other conditions are found besides the varicosity, such as ulcer, senility, cardiovascular-renal disease, syphilis or pregnancy.

The necessity for a complete, general physical examination is stressed, in order to rule out or discover one or more of the above conditions, should they be present. A varicose ulcer requires careful study, and no injection should be made if thrombophlebitis is present. It should be deferred until the patient has been symptom-free for at least six months. Local therapy, by means of broth, either applied locally or by subcutaneous injection around the infected areas, should first be employed.

Systemic disease, such as hyperthyroidism, tuberculosis, uncontrollable or advanced cardiovascular-renal disease, and acute respiratory infection, mechanical obstruction of the deeper veins, and latent infection are contraindications to the injection treatment. Fatal embolism seems to be most common when the varicosity is injected in the presence of an infection.

Following the usual Trendelenburg tests, I originally used dextrose and chloride solutions. Later, quinine and urethane, or 5-per-

*Northwest Med., March 1935

cent solution of sodium morrhuate were used, in the majority of cases. Following the injection, pressure pads, held in place with either adhesive or an A-C bandage, were applied. McPheeters' admonition that a patient should always be kept ambulatory during treatment is mentioned. In certain cases De-Takats' office procedure of ligating the long saphenous vein is recommended.

Simple ulcers are treated by the injection of the "feeder" vein, whenever it can be located. At times, McPheeters' "rubber heart" and a tight Unna's boot are indicated. Following injection near the ulcer, an ointment containing camphor, 4.5 Gm.; phenol, 4.5 Gm.; zinc oxide, 150 Gm.; calomel, 180 Gm., in a base of liquid petrolatum, 80 Gm.; anhydrous lanum, 210 Gm.; white wax, 110 Gm.; and petrolatum, 260 Gm., is applied, and the whole area then dressed with McPheeters' "rubber heart" or with Unna's boot, and the latter allowed to remain in place about one week, if not too uncomfortable.

The broth treatment was suggested by Dr. O. J. West, of Seattle, and is prepared according to the following formula:

Beef extract	3 Gm.
Peptone	10 Gm.
Sodium chloride	8 Gm.
Distilled water q.s. ad	1000 cc.

This is brought to a pH of about 7.3, usually accomplished by the addition of 9 cc. of NaOH.

If the offending vein is too deep to ligate and inject, it is usually better to excise the ulcer, then inject the vein and ligate it, and immediately cover the raw surface by Thiersch or Reverdin skin grafts.

Fatal pulmonary embolism has never occurred in my cases, although McPheeters reports four such cases among a total of 53,000 patients, and Silverman 19 in a series of 100,000 cases. Perivenitis is the most frequent and painful serious local complication, and prevents further injection until it has subsided by the use of heat and elevation of the extremity. Sloughs and injection ulcers are annoying, and are usually due to leakage of the solution into the tissues.

EDWIN A. NIXON, M.D.

Seattle, Wash.

Copper and Iron in Human Blood*

MANY workers have established copper as an essential factor in hematopoiesis. While the mechanism of its action is not quite clear, it has been shown that copper stimulates the formation of an iron complex, *a*-cytochrome, which is related to the hemochromogens, which in turn are derivatives of hemoglobin. The administration of copper results in a reduction of the amount of inorganic iron stored in the liver and a corresponding increase in the organic form, which is a precursor of hemoglobin. Copper is apparently active in effecting the conversion of stored iron into hemoglobin, and thus tends to reduce the amount of iron stored in the reservoirs of the body. It is now quite widely accepted that copper, in the presence of iron, stimulates the regeneration of hemoglobin in animals made anemic by a milk diet. Animals receiving copper unsupplemented by iron may show an increased erythrocyte level.

DRS. A. SACHS, V. E. LEVINE, and A. A. FABIAN.

*Arch. Int. Med., Feb., 1935.

Birth Control and Mental Hygiene*

I BELIEVE that at least ten groups or types of mental or emotional disturbance exist, which proper contraceptive information and instruction can often prevent and sometimes entirely overcome. All but the last of these are represented by one or more actual cases which have come to my attention in my own neuropsychiatric practice.

Women's fear of pregnancy as such. In the absence of adequate justification by physical, economic or other facts, this condition should generally be combated by a careful psychologic investigation, followed by sympathetic and intelligent instruction, persuasion and encouragement. When all these fail, the chronic panic state remains a problem which is only touched by a gradually built up confidence in a very sure and safe contraceptive technic.

Anxiety neuroses in women are often traceable to no other set of causes than fear of pregnancy, based on secondary considerations, such as economic stress already existing, overcrowding, progressive failing of strength, actual chronic disease, hereditary disease potentialities, or menacing habits in the husband, such as chronic alcoholism, drug addiction or criminality. Most of these are cold, hard facts which cannot be changed, and prevention of pregnancy is called for.

Sexual frigidity in women is an easily understood consequence of either of the foregoing. Obviously, there can be no relief unless either the conditions are changed or some safe contraceptive procedure is adopted. Practical experience and observation shows only too clearly that the latter is usually the only course that can be successfully followed.

Anxiety neuroses in men not infrequently appear to be associated with the practice of coitus interruptus. There are various theories to account for this relationship. It does not matter which, if any, of them is true, providing there is some causal connection. The practice, of course, also tends to deprive the woman of her normal and rightful satisfactory experience. With the development of suit-

*From *Birth Control Review*, Mar., 1935.

able contraception, there is no excuse for the continuation of this undesirable makeshift.

Psychic impotence in men may come about from a multitude of causes, mostly emotional. But whatever the cause and however well it may be met by psychotherapy, a beginning must be made in successful performance. The various devices used by men for contraception are almost guaranteed to prevent this success. The employment of modern contraceptive technic by his partner permits a natural and unhampered attempt by the man and greatly increases his chances of recovery.

A warped or wrecked sexual life of both husband and wife only too often results from any of the foregoing conditions. The consequences of unhappy marriage, with or without divorce, both to the partners and to children, are too well realized to need comment here. The occasional experience that comes to the medical advisor of repairing and saving the sinking ship by correction of mistaken ideas, faulty technics and tragic disharmonies is one of his richest rewards. Such accomplishment has only been reasonably possible since the development of modern contraception.

Remorse over abortions is occasionally extremely serious. Like any other remorse, it must be treated psychotherapeutically by the physician. I have seen several severe instances of women who had been raised as Roman Catholics, but had drifted away from that faith. Early training had dominated the picture. With contraception displacing abortion, this cause of mental agony will vanish.

Exhaustion psychoses in women from too frequent pregnancies. Whether the frequency of pregnancy is actually responsible for these insanities or merely "pulls the trigger" for some underlying factor to explode, is of little consequence. The result is the same and that such things occur is well known. The answer, of course, is proper spacing of children.

Personality difficulties in men can result from the tension of self-enforced continence, from conflict and remorse over extra-marital excursions, and from inferiority feelings resulting from substitutions, either masturbation or perversions, carried out because of ignorance of better ways.

General paresis, the most serious of the organic psychoses, is caused only by syphilis. The following line of thought may seem a bit involved, but I feel sure of its essential soundness: Contraceptive technic permits earlier marriage, which cuts down the use of prostitutes, which lessens the spread of syphilis, which decreases the amount of general paresis.

JOHN FAVILL, M.D.
Clinical Professor of Neurology, Rush Medical College, University of Chicago.

Histidine Monohydrochloride in the Treatment of Peptic Ulcers
(A Preliminary Report)

IN the past few years, many encouraging reports have appeared in the medical literature in regard to the treatment of peptic ulcers. No doubt, we are all familiar with the classical work of Dr. Sippy. His dietetic management, together with the alkalies, is still the basis of many ulcer treatments.

In the latter part of the past decade, European clinicians became quite enthusiastic over the cholesterin injection treatment.

In 1933, I reported[1] two cases of peptic ulcer, treated with Metaphen solution 1:500, with equal parts of glycerin. Those patients are symptom-free at the present time and they have taken their respective places in the economic world.

The European workers, as early as 1933, commenced to report the use of histidine in experimental ulcers and, in the December 8, 1934, issue of the *Lancet*, E. Bulmer reported the histidine treatment of peptic ulcer in 52 cases.

My preliminary report is concerned with the treatment of 5 cases of peptic ulcer, extending over a period of three months. Classical symptoms of epigastric pain, nausea, loss of weight and strength, together with sour eructations, have been described by the patients. The period of illness extended from two years to five years, with varying periods of remissions (3 to 8 months). Roentgenograms confirmed the diagnosis in four cases.

An Ewald test meal was given to all five, with the following results:

Case No.	Time of Fasting	Amount	Free HCl	Total Acid	Combined Acid
1	60 min.	50 cc.	20	25	5
2	60 min.	75 cc.	60	70	10
3	60 min.	25 cc.	26	31	5
4	60 min.	50 cc.	25	35	10
5	60 min.	80 cc.	30	50	20

Management

Diet: Salad, fried and twice-cooked foods, raw fruits, bananas, coarse vegetables, hot bread, cakes, spices, sweets and alcoholic beverages were prohibited. Smoking and exercise were allowed. Milk and water drinking was encouraged.

Medicine: An initial dose of 2 cc. of histidine monohydrochloride was given, intragluteally, once a day for two days; then increased to 5 cc. every second day. The patients received from 6 to 10 injections. One patient complained of intense pain after the first injection, so after that they all received

1.—CLIN. MED. & SURG., Aug., 1933, p. 429.

1 cc. of 1-percent procaine hydrochloride solution with the injections. In two nervous individuals, subcutaneous injections of glycerophosphates compound (double strength) were given, 1 cc. at a time.

In all patients gratifying results were obtained. They are able to enjoy their food and activities and work full time. Gastric analyses and x-ray pictures have not been repeated so far. If the present state of symptom-free life continues for six months, then I shall subject them to a thorough laboratory checkover.

F. F. Schwartz, M.D.

Fairport Harbor, Ohio.

Intraperitoneal Vaccination Against Peritonitis*

Bargen has found that the organisms, which were most prevalent in the abdomens of individuals who had succumbed to peritonitis following colonic operations, were colon bacilli and streptococci. A vaccine, which has been prepared from these organisms, has been injected intraperitoneally three days before patients have been subjected to intestinal resection. The materials which are required for such a procedure are a dull-pointed spinal puncture needle, a 10 cc. Luer's syringe, procaine hydrochloride for a local anesthetic, a 1 cc. Luer's syringe for the injection of the anesthetic, and cleansing fluids for the skin. The injections are given directly into the peritoneal cavity by strictly aseptic technic. Since October 1, 1928, more than 1,500 patients, who submitted to operations which involved the colon, received intraperitoneal injections of this vaccine before operation, to protect them against peritonitis.

In addition to the administration of vaccine, the non-residue dietary regimen has been greatly elaborated and plays an important part in the preoperative treatment.

Since we have employed this plan of management of patients who are to undergo operations which involve the colon, the mortality from postoperative peritonitis has been reduced 66 percent; that is, where we previously lost three patients from peritonitis, one now succumbs. This decrease in mortality can hardly be looked upon as the result of any factor other than the preoperative care. It seems that in those cases in which fatal peritonitis develops, the offending organisms are virulent types of streptococci, the exact nature of which we have not yet been able to determine.

We have made careful study of the reactions which have followed the injection of the vaccine. In all instances, a sharp elevation of temperature occurs; this ranges up to 102°F., and occasionally higher. In cases in which there is a neoplasm of the colon, which has caused perforation of the intestine or which has metastasized, the temperature curve is almost diagnostic if the patient has received an intraperitoneal injection of vaccine. The temperature recedes in a gyrate fashion and returns to normal twenty-four to thirty-six hours after the injection of the vaccine.

We are convinced that intraperitoneal vaccination against peritonitis, in addition to the other phases of the preoperative management, has appreciably reduced the death rate from this condition.

Claude F. Dixon, M.D., and J. Arnold Bargen, M.D.

Rochester, Minn.

*N. Y. State J. M., May 15, 1935.

Eczema of Infancy and Childhood*

We have observed 93 cases of eczema in infancy and childhood. Of these, 23 were infants and the others varied in age from one to twelve years, the majority being in the younger age groups. They were tested by means of scratch and patch tests. In many instances dietary tests, by elimination, were also carried out.

There was an inverse ratio of positive to scratch and patch tests made with food proteins, as compared with the ratio of such reactions to tests made with environmental substances. Among the food proteins, egg white and egg yolk evoked the greatest number of positive reactions, usually only by the scratch tests. Among the contact substances, goose, duck and chicken feathers elicited the greatest number of positive reactions, usually by the patch tests. The elimination diets proved of practical value only in the infantile group. Milk was found to be the most frequent etiologic agent by this method of testing.

Our experience has led us to conclude that patch tests with environmental substances were much more reliable than the scratch tests in determining the cause of eczema in children, at least as far as the test substances we used are concerned.

Individuals with an atopic history show a special tendency to develop a neurodermatitis type of skin reactivity. Of the 22 patients in the atopic group, only one showed a vesicular eczema after three years of age. It can be said that, while only fifty percent of patients showing neurodermatitis disseminata have a family history of allergy, nearly all of the atopic children developed a neurodermatitis disseminata.

The percentage of positive tests by the patch and scratch methods is much higher in the atopic group than in any other group, as

*N. Y. State J. of Med., Nov., 1934.

is the personal history of allergy. In the atopic individual we seem to have patients who show a particular tendency to allergic manifestations.

The mechanism of the pathogenesis and the seat of the reaction of the eczema in all the groups seem fundamentally the same. The skin changes are brought about, for the most part, by a reactivity between fixed antibodies in the epidermis and the allergens. There is no evidence in our work that in neurodermatitis disseminata we have a fundamentally different mechanism from that of the vesicular eczemas, in that we are dealing with a primary vascular sensitivity in the papillary bodies which is essential to an urticaria. In such a conception the epidermal changes would be purely secondary to the cutis changes and caused by rubbing and scratching.

SAMUEL M. PECK, M.D.
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Postural Hypotension with Syncope*

THE diagnosis of postural hypotension, as first described by Bradbury and Eggleston, is predicated upon the following phenomena:

1.—Syncopal attacks on change of posture, with a drop of the systolic blood pressure to the shock levels;

2.—Anhidrosis;

3.—Increased distress during the heat of the summer months;

4.—Slow and unchanging pulse rate, with marked variation in the blood pressure;

5.—Slight decrease in the basal metabolic rate;

6.—Signs of slight and indefinite changes in the central nervous system;

7.—Blood urea at the upper normal level.

Other relevant signs or symptoms in one or more of Bradbury and Eggleston's three cases were:

1.—Greater excretion of urine during the night than during the day;

2.—Loss of sexual desire and impotency.

3.—A false general appearance of youth, in comparison to the true age;

4.—Pallor of the skin and mucous membranes;

5.—Secondary anemia.

This condition must be differentiated from toxic vertigo, states of exhaustion, the Adams-Stokes syndrome, intracranial lesions, epilepsy and vestibular disease.

Mrs. H. M. S. was admitted Jan. 12, 1932, to St. Elizabeth's Hospital, with a tentative diagnosis of postural hypotension with syncope. The diagnosis was confirmed by the procedure of Bradbury and Eggleston. Atropine, gr. 1/60 (1 mg.), subcutaneously, produced no change in the pulse rate. Epinephrin, 1:1,000 solution, 1 cc. subcutaneously, elevated the pulse rate to 126 and caused nervousness and tremor. Pilocarpine, gr. 1/10 (6 mg.) subcutaneously, induced marked sweating and salivation.

The patient was given 25 mg. of ephedrine sulphate every 3 hours (5 doses per day). This dose was continued for 2 weeks, until Jan. 26, 1932, when she was somewhat relieved, and then increased to 25 mg. each hour during the day. There then followed a remarkable improvement and gradually the dose was lowered until in July, 1932, it was discontinued, and up to the present time none has been needed. Her weight has increased from 112 to 156 pounds; the blood pressure phenomena are no longer present; she is able to do her own housework; the urinary symptoms have abated; and the moodiness and despondency are relieved. At times she still complains of some general nervousness.

Postural hypotension with syncope is now a definitely recognized clinical entity, but no therapy was found of value until Ghrist and Brown reported the successful use of ephedrine sulphate in their second case. This is the second case benefited by the use of this drug and the change in the patient has been so marked that the word "cured" may be used advisedly in this instance.

CLIFFORD R. WEIS, M.D., F.A.C.P.
Dayton, Ohio.

*Ann. Int. Med., Feb., 1935.

Zipper Bandages*

REMOVAL of the tight adhesive applications to support closed abdominal incisions at times becomes a serious ordeal, especially when these strips have to be frequently detached.

In the Babcock Surgical Service at Temple University Hospital, we have been using the zipper and it has solved our problem very nicely, both in abdominal and in extremity work. As sold, the zipper has a small border of cloth tape which lends itself to incorporation into the adhesive tape. Sufficient adhesive strips are cut and overlapped and the end next to the zipper is folded over so that there is a 3-inch facing on the adhesive side. A simple rubber punch is used to make multiple perforations at distances from half an inch to an inch in both the cloth tape of the zipper and in the faced adhesive strips, and it also inserts a metal eyelet on the zipper tape. A piece of string is then laced through the openings, joining the adhesive tape securely to the zipper. The finished dressing is then applied. The zipper may be removed after use by merely pulling out the lacing on each side; it is washable and sterilizable.

With the zipper bandage we find that many

*J. A. M. A., 103:983, Sept. 29, 1934.

more dressings requiring attention every few hours may be changed without mechanical difficulty and can be assigned to the nurse.

GERALD H. PRATT, M.D.
Philadelphia, Pa.

Look for THE LEISURE HOUR among the advertising pages at the back.

Value of the Friedman Modification of Aschheim-Zondek Test*

THE Friedman test is a modification of the Aschheim-Zondek test for pregnancy, wherein young, nonpregnant, adult, female rabbits, which have been isolated from male rabbits for at least three weeks, are employed in place of young female mice. The rabbits are injected intravenously with 10 cc. of urine (fresh morning specimen) and the ovaries examined grossly after forty-eight hours.

In a recent review of 4,595 Friedman tests in uterine pregnancy, performed by thirty-two clinical pathologists, 97.19 percent of the tests were correct. Of the 2.83 percent erroneous results, 0.52 were false positives and 2.31 were false negatives. The most common cause of false negative results was testing the urine before the women had been pregnant long enough for the result to be positive. However, any laboratory procedure which gives results with an accuracy of over 97 percent must be considered extremely satisfactory. The test was found to be correct in 77.8 percent of the cases of ectopic pregnancy. Its diagnostic value is greatest in cases in which the result is positive. A negative test does not exclude an ectopic gestation.

The Friedman test is not a means of determining the death of the fetus. Since a positive test means that living chorion is in contact with the maternal circulation, stimulating the production of the anterior pituitary hormone prolan A, which is found in the blood serum and excreted through the urine, a negative test in either ectopic or uterine pregnancy would indicate dead or degenerating villi, with or without a live fetus. The test is positive in cases of hydatid mole and chorionepithelioma, in which no fetus is present; also in some tumors of the testis. It has been positive for as long as thirty days after the death of a fetus in missed abortion.

This test has been found positive as early as ten days after coitus. It usually is positive shortly after the first missed menstrual period. It becomes negative within 24 to 72 hours postpartum.

The most desirable specimen is the first urine passed in the morning, and it should be taken at a time when the patient is not under medication. Catheterization is not necessary, but cleanliness of the specimen and container is essential. The taking of drugs, such as ergot, quinine, luminal, morphine, codeine or aspirin, affects the animals used for the test, some drugs producing fatal results.

Goldberger and his co-workers have increased the percentage of accuracy by employing two rabbits and injecting 20 cc. of urine into each, so that in over 1,000 cases the percentage of false positives was only 0.09 and of false negatives 0.55, giving an accuracy of over 99 percent.

While the Friedman test, like other laboratory procedures, has its limitations, it is the most valuable laboratory aid to the clinician in determining pregnancy. It is useful in determining early pregnancy in cases in which early interference may be necessary, as in diabetes, tuberculosis, renal or cardiac disease; in cases where differential diagnosis between normal pregnancy, ectopic gestation, toxemia of pregnancy or chorionic tumors and other acute or chronic abdominal conditions is necessary; where differential diagnosis between uterine tumors and pregnancy is required; and in testing the completeness of removal of the products of gestation, hydatid mole or malignant tumors originating from chorionic villi. Finally, it is of value in the diagnosis of testicular tumors and their recurrence.

JOSIAH J. MOORE, M.D., F.A.C.P.
Chicago, Ill.

*From the Ravenswood Hospital Library, Chicago.

Etiology and Treatment of Iritis*

THE diagnosis of iritis is only the beginning. The determination of the etiology should be the basis of effective treatment.

Syphilis has been regarded as the most frequent causative factor in iritis. Ophthalmologically, syphilitic iritis cannot be differentiated from iritis due to some other cause, except in the case of iritis papulosa. The proof of its specific etiology must rest on a study of the patient as a whole. The utilization of the Wassermann and spinal fixation tests should not be neglected.

Tuberculosis of the iris, like tuberculosis elsewhere, is essentially a chronic disease. It is characterized chiefly by the formation of nodules in the iris stroma, deposits on the posterior surface of the cornea that resemble cold mutton fat and, eventually, the absorption of the iris pigment. It is usually associated with tuberculosis in other parts of the uveal tract.

The outstanding etiologic factors in iritis are syphilis, tuberculosis, rheumatism, the so-called idiopathy and focal infections. Oral sepsis and disturbances of the pharyngeal ring are prominent in causation. Pathoses of the teeth and tonsils contribute. The gonococcus still has a place in the etiology of

*J. Ind. St. M. A., Feb., 1935.

iritis. Pathoses of the genito-urinary tract, especially the prostate, are of great importance in etiology.

In the treatment of iritis, the basis of our therapeusis is the general treatment of the etiologic factor. It is, therefore, the accepted general treatment for syphilis or tuberculosis, or for the removal of foci of infection. The further treatment of the case is the local or symptomatic treatment, as indicated.

Etiology and not diagnosis is the guide to effective treatment.

The cooperation and help of a good internist or a specialist should be invited in establishing the true etiologic factor and in planning the course of systemic treatment.

Allergy, especially in relation to focal infection, may open up a new field as an etiologic factor and thereby help us in the treatment of a group of diseases in which we have heretofore somewhat failed.

Non-specific protein therapy is a great help in certain cases, but it is not yet on a firmly established scientific basis.

Treatment is a three-fold proposition: First, systemic; second, local; third, surgical.

B. W. Egan, M.D.

Logansport, Ind.

The Newborn Infant*

Liebmann has emphasized the fact that the mortality of the newborn is greatest (50 percent) on the first day of life, the death rate decreasing gradually to 1 percent on the tenth day. The chief cause of death is asphyxia or cerebral hemorrhage; the next most frequent cause, immaturity or underdevelopment; while a third and much smaller group comprises congenital conditions and melena neonatorum.

One must differentiate between simple apnea, a physiologic process, and true asphyxia. The former status occurs because, as yet, there is no need for more oxygen within the tissues and the normal chemical stimulation has not ensued.

Asphyxia is a deficient oxygenation of the child's blood. The variance of heart rate, greatly below or above the normal (generally taken as 120 to 140), is our best indication of asphyxia, probably of a grave nature, the seriousness of which increases as the rate remains low.

Causes of asphyxia are numerous but two are of moment: That following a too-rapid or forced labor and the other resulting from drugs or anesthetics. At the termination of a rapidly expulsive labor, or when quinine or pituitary has been employed to induce or hasten the process, asphyxia may be expected, because of a continued tonic state of the uterus, forcing the fetal blood away from the placental side toward the systemic side of the child's circulation, for longer than normal periods, thus hindering an exchange of gases at the placental side. An extreme state of this condition leads to intracranial hemorrhage.

With our more general use of anesthetics, analgesics and drugs for pain relief during labor, depression and narcosis of varying degrees, up to true asphyxia, are to be seen.

I do not intend to disparage the alleviation of the pains of labor. Ether alone, in moderate amounts, practically never produces asphyxia, whether given by inhalation or in the rectal oil mixture. As much cannot be said of chloroform or nitrous oxide, though they have a moderate range of usefulness. Morphine is widely used for relieving first-stage pains, yet its safety and action upon the fetus is questionable.

Irving, of the Boston Lying-In Hospital, says: "We do not believe morphine or any of its derivatives should be used during labor, as they have a marked effect in delaying the initial respirations of the infant." This conclusion has been confirmed by Baer, Piper, Plass and others. In my personal experience, sodium amytal and pentobarbital accomplish all that is desired, without untoward results.

As to the manner of resuscitation of the asphyxiated child, gentleness in handling becomes the main desideratum. With the respiratory passages cleared, the maintenance of warmth and brisk rubbing will be sufficient. The administration of oxygen and carbon dioxide, if available, is indicated in certain cases. The use of alpha lobelin, in doses of 0.5 to 1 cc., intramuscularly or into the veins of the clamped umbilical cord, has been found of value. It is a powerful respiratory stimulant. Epinephrin, caffeine and other cardiac stimulants seem actually detrimental.

For the intracranial hemorrhages following operative delivery and precipitous labor, the following therapeusis is presented:

1.—Stop the hemorrhage—give whole blood.

2.—Relieve the pressure—spinal puncture.

3.—Maintain the action of vital centers—oxygen and carbon dioxide.

4.—Control convulsions—sodium luminal ⅛ to ¼ gr.

5.—Avoid strenuous mechanical methods of resuscitation. Gentle handling is always on the side of safety.

Foster J. Hudson, M.D.

Indianapolis, Ind.

*J. Ind. St. M. A., Feb., 1935.

DIAGNOSTIC POINTERS

Physiologic Sterility

DESPITE the general enthusiasm regarding the "safe period," according to Ogino and Knaus, well-qualified biologists and physiologists feel that the evidence is over-optimistic.

Hannah Stone reports a series of 24 women, where coitus occurred on only one occasion, in whom 7 impregnations occurred outside the computed fertile period.—FRANCES E. SHIELDS, M.D., in *Trained Nurse & Hosp. Rev.*, Mar., 1935.

Hypertension

HYPERTENSION is only a symptom of arteriolar sclerosis. The predisposing factors are *heredity*, overwork (especially of the nervous system) and overeating. Socalled "nervous breakdowns" are rather common in the histories of hypertensive patients.—DR. CAMPBELL P. HOWARD, McGill University, Montreal, Can.

Cure of Gonorrhea

IN a gonorrheal patient, whose discharge has ceased or is negative for gonococci, a relatively large (0.3 to 0.4 cc., properly diluted) intradermal dose of gonococcus filtrate (Corbus-Ferry) will sometimes produce a discharge containing gonococci. This is a good routine provocative test for cure.—DR. ROBERT W. MCKAY, Charlotte, N. C., in *South. M. & S.*, Mar., 1935.

Manic-Depressive Psychosis

AN attack of manic-depressive psychosis following a trivial incident has a worse prognosis for recovery than one in which the exciting factor was severe, because it shows a severely compromised constitutional make-up.—DR. GERALD R. JAMIESON, in "Piersol's Cyclopedia of Medicine," Vol. X.

Urine Acidity and Diet

A HYDROGEN ion (pH) determination on a 24-hour specimen of urine will show whether or not one's diet is balanced as to the acid-base food stuffs. The most common error in diet is inadequate consumption of the complete proteins found in meat, milk and eggs.—DR. C. U. MOORE, Portland, Ore., in *Northwest. Med.*, June, 1935.

Differential Diagnosis of Acute Abdominal Malaria

TWO clinical signs of great significance characterize cases of abdominal malaria. These are the presence of macroscopic or occult blood in the gastric contents or vomitus during acute paroxysms of the disease, and the absence of peritoneal inflammation—involuntary abdominal rigidity.

Of 21 cases of malaria, all but 3 (85 percent) showed blood in the gastric secretion. In none of the cases was there actual involuntary muscular rigidity of the abdomen. The great majority of the sufferers in this series were infected with estivo-autumnal parasites—DR. K. P. A. TAYLOR, of Havana, Cuba, in *Am. J. Med. Sc.*, Nov., 1932.

Intercostal Neuralgia from Gastric Ulcer

A CASE of typical intercostal neuralgia was seen in a man 53 years old, who had a history suggesting syphilis (Kahn and Wassermann tests negative) and an ulcer on the lesser curvature of the stomach. Following the surgical cure of the ulcer, the intercostal pain disappeared entirely.—DR. MARIO NICASTRO, in *Semana Med.*, May, 1934.

Hodgkin's Disease

IN Hodgkin's disease, the individual swollen lymph glands remain distinct from one another, do not tend to break down and suppurate, and do not become fixed either to the skin or to the deeper parts, as they do in tuberculosis or in the secondary deposits of malignant disease.—*Radiol. Rev.*, April, 1935.

Activity of Tuberculosis

WHILE tuberculous patients are under observation and treatment, serial roentgenograms afford the best means of determining activity; next in order of value the leukocytic reactions and red cell sedimentation rate; lastly, physical signs and symptoms.

In a disease as complex as tuberculosis, no one procedure is infallible, and the best information is obtained by a careful and intelligent interpretation of all methods available that have given evidence of merit.—DR. WM. H. ORDWAY, in *New Eng. J. of M.*, Aug. 9, 1934.

NEW BOOKS

Any book reviewed in these columns will be procured for our readers if the order, addressed to CLINICAL MEDICINE AND SURGERY, Medical & Dental Arts Bldg., Waukegan, Ill., is accompanied by a check for the published price of the book.

The wealth of continents would not compensate for a good book's import.—CHANNING.

Groddneck: Man As a Symbol

THE WORLD OF MAN. *By Georg Groddneck, M.D., (Berlin) Author of The Book of the It, The Unknown Self, Exploring the Unconscious, etc. London: The C. W. Daniel Company. 1934. Price, $3.00.*

Almost exactly a year ago, there passed from the world of flesh into the world of a reality of which he was perfectly confident, a man who had lived about as completely as anyone of this generation, and who had gathered rich fruit through his living. Some of the choicest of that fruit is spread before us in these pages. He says, "A man who never gives himself—heart, soul and mind—to *this* life, knows nothing about living and blasphemes against God and the world."

Groddneck was a pupil of Schweninger and Freud, and gained from both ideas which he built into his own individual philosophy, though he followed neither slavishly. He believed that the mutual relationship between the patient and the doctor was the most important factor in the treatment of disease, but he was never dogmatic nor bound by the fetish of consistency.

A poet and philosopher, as well as one of the most successful clinical psychiatrists in Europe, this man was also an amateur etymologist of such distinction that the professionals listened with respect when he discussed the origins of words. This facet of his many-sided nature shines forth from almost every page of this, his last book, in which he develops the principal thesis that man is a symbol of the universe and creates his world in his own image.

The idea of the mind and body as two separate entities was rubbish to Groddneck. He saw the mind-body as one coordinated, living unit, and the life it lived, as an *individual*, was the engrossing thing to him. He deplored the emphasis now laid upon *personality*, which at best is only a mask for the soul.

To him, the basic unit, the *individuum*, was man-woman-child, and by showing the derivation of the word sex from *sexus*, a part of the verb *secare*, to cut, from which also comes the word segment, he shows how personal sex cuts right across the basic unity and has caused us to lose sight of it.

The way in which he analyzes and points out the conscious or unconscious symbolism in a number of masterpieces of painting (reproduced in the book) is masterly and fascinating, even though one feels that he sometimes strains a point to find sexual connotations.

At the root of his clinical practice was the dictum: "Everything has at least two sides . . . If we take the trouble to make the search, we can always find both an inward and an outward cause for any event in life . . . Man creates his own illnesses for definite purposes, using the outer world merely as an instrument." So when a woman came to him with a broken arm, he asked her what it was which had made it seem necessary for her to fracture a bone.

No mere review can give any true idea of the depth and richness of this remarkable piece of work, especially the last chapter, "The Salvation of the World," which is truly magnificent. It is possible only to recommend all eager and robust thinkers to read it for themselves and find out. It is not predigested pap for childish minds.

Gradwohl: Laboratory Technics and Diagnosis

CLINICAL LABORATORY METHODS AND DIAGNOSIS. A Textbook on Laboratory Procedures With Their Interpretation. *By R. B. H. Gradwohl, M.D., Director of the Gradwohl Laboratories; Director of the Gradwohl School of Laboratory Technique; Director of Laboratories, St. Louis County Hospital; Chief of Staff and Pathologist to Christian Hospital; Lieutenant Commander, Medical Corps, Fleet, United States Naval Reserve. With 328 Illustrations in the text and 24 color plates. St. Louis: The C. V. Mosby Company. 1935. Price, $8.50.*

Whether he ever actually does any clinical laboratory work or not, every physician ought to be thoroughly familiar with such methods, in order to have an idea as to what the laboratory can tell him about his patients, and what the reports mean when he receives them.

Here is a complete postgraduate course in clinical laboratory methods and technics, prepared by a man who has been teaching these subjects for years and who knows, not only how to do the things, but how to instruct others how to do them.

Not only are technical matters explained in complete detail, with illustrations, frequently

in color, to show what to do and what the results will be, but the clinical significance of each test is discussed, so that the physician who makes the tests or receives the reports will know, not merely what was done, but why, and what the result means to his patient.

No such complete, elaborate, detailed and practical manual of laboratory diagnosis has appeared heretofore. The paper and typography are beyond criticism; the illustrations, most of which are original, are splendid and well chosen; there are 24 highly instructive color plates; the index is extensive; only the binding leaves something to be desired, and if that gives way under the hard use that this volume is sure to receive, the price is so reasonable that one can well afford to have it rebound.

The laboratory technician and the physician who does even a part of his own laboratory work simply cannot afford to miss this book; and every other man who is in clinical practice can get his money's worth out of it in the first month, if he will give it some real study.

Hertzler: Peritoneum

SURGICAL PATHOLOGY OF THE PERITONEUM. *By Arthur E. Hertzler, M.D., Surgeon to the Agnes Hertzler Memorial Hospital, Halstead, Kansas; Professor of Surgery, University of Kansas. 201 Illustrations. Philadelphia, Montreal and London: J. B. Lippincott Company. 1935. Price, $5.00.*

The deep and earnest student of medicine will never be wholly satisfied with merely superficial and "practical" information regarding the normal and pathologic states of the human body, and it is for such students that exhaustive monographs on a single organ or structure, like this present volume, are written.

Dr. Hertzler has been studying the peritoneum for forty years, and now bewails the paucity of his knowledge; but those who study this beautifully made book carefully will know more about it than they ever did before.

Beginning with the embryology and development of the digestive tract, the author follows through the usual and unusual anatomic arrangements of the peritoneum and discusses its physiologic functions and the method of the healing of its wounds. His chapter on adhesions is, alone, worth the price of the book to any operating surgeon.

The Doctor believes that the only important disease of the peritoneum is inflammation, of one sort or another, and his chapters on the various types of peritonitis are, accordingly, of peculiar completeness and value, as is also the one on diseases of the omentum. Tumors of the structures under discussion are also fully discussed.

It is a real pleasure to see a book so mechanically perfect as this one. Coated paper is used throughout, so that the large, clear type and the splendid illustrations (all or most of which are original) appear to the best advantage. The drawings, by Tom Jones, and the photographs, by Barlow, in themselves constitute an excellent course in surgical anatomy. There are more than 200 pictures, which accurately supplement the text.

No physician who ever has occasion to open the belly surgically can afford to miss this book, because it will give him help which will be invaluable in every abdominal operation. Even those who do no surgery will find it intensely interesting and will gain a broader outlook, which will result in definite improvement in their professional skill and accuracy.

Year Books

THE 1934 YEAR BOOK OF THE EYE, EAR, NOSE AND THROAT. *THE EYE, edited by E. V. L. Brown, M.D., Professor of Ophthalmology, University of Chicago, etc.; and Louis Bothman, M.D., Associate Professor of Ophthalmology, University of Chicago. THE EAR, NOSE AND THROAT, edited by George E. Shambaugh, M.D., Professor of Otology, Rhinology and Laryngology, Rush Medical College of the University of Chicago, etc.; and Elmer W. Hagens, M.D., Assistant Clinical Professor of Otolaryngology, Rush Medical College of the University of Chicago.*

THE 1934 YEAR BOOK OF PEDIATRICS, *edited by Isaac A. Abt, D.Sc., M.D., Professor of Pediatrics, Northwestern University Medical School etc. With the Collaboration of Arthur F. Abt, B.S., M.D., Associate in Pediatrics, Northwestern University Medical School, etc.*

THE 1934 YEAR BOOK OF GENERAL THERAPEUTICS, *edited by Bernard Fantus, M.S., M.D., Professor of Materia Medica, Pharmacology and Therapeutics, University of Illinois College of Medicine, etc. Second Edition.*

THE 1934 YEAR BOOK OF DERMATOLOGY AND SYPHILOLOGY, *edited by Fred Wise, M.D., Professor of Clinical Dermatology and Syphilology, New York Post-Graduate Medical School and Hospital of Columbia University, etc. and Marion B. Sulzberger, M.D., Associate in Dermatology and Syphilology, New York Post-Graduate Medical School and Hospital of Columbia University.*

THE 1934 YEAR BOOK OF NEUROLOGY, PSYCHIATRY AND ENDOCRINOLOGY. *NEUROLOGY, edited by Hans H. Reese, M.D., Professor of Neurology and Psychiatry, University of Wisconsin Medical School. PSYCHIATRY, edited by Harry A. Paskind, M.D., Assistant Professor of Nervous and Mental Diseases, Northwestern University Medical School, etc. ENDOCRINOLOGY, edited by Elmer L. Sevringhaus, M.D., Associate Professor of Medicine, University of Wisconsin Medical School. Chicago: The Year Book Publishers, Inc., 304 South Dearborn Street. Prices, respectively, $2.50, $2.25, $2.25, $3.00 and $3.00.*

The "Year Books," while they do not take the place of good medical journals for keeping abreast of the progress of medicine, are a real boon to the busy physician and to those

who do not care or cannot afford to have their journals bound for reference.

In these volumes one finds a resumé of the recent progress in the various specialties, written by recognized authorities in the form of connected stories, with references to the periodicals in which the original reports appeared, and with indexes of subjects and authors.

The individual books are of a convenient size, well-bound and adequately illustrated, and the paper and type are excellent, while the prices are very moderate.

The strict specialist may be satisfied to buy only the volume dealing with his specialty, but the general clinician will need the whole set, which will be a valuable addition to any medical library. The one on "General Therapeutics," by Dr. Bernard Fantus, has proved to be so popular that a second edition of it has already been called for. Every practitioner should have this volume, at least.

The physician who will study these books carefully will never be more than a year behind the times; and they will prove to be valuable reference works, to be consulted as occasion arises.

Thomen: False Ideas Corrected

DON'T BELIEVE IT! SAYS THE DOCTOR. False Notions, Errors, Misconceptions and Misinformation Pertaining to Health and Hygiene, Major Ailments and Cancer, Minor Ailments and Remedies, Food and Diet, Mind and Senses, Body, Marriage and Death; and Health Fallacies Derived from Superstition and Folk-lore, Explained and Corrected. *By August A. Thomen, M.D., Lecturer in Medicine, College of Medicine, New York University, etc. With Foreword by Harlow Brooks, M.D., Emeritus Professor of Clinical Medicine, New York University, etc. 40 E. 49th Street, New York; August Thomen, M.D., 1935. Price, $2.65.*

It is surprising to note how many false notions are generally accepted, even by people who are otherwise above the average in intelligence. Often these superstitions, folk tales and erroneous impressions are harmless, but too frequently they result in conduct which is, directly or indirectly, prejudicial to health, and in such case it is the duty of all who stand in advisory capacity to the public, especially physicians, to correct them.

This, however, is not always easy, on the spur of the moment, because the false notion may be too deeply rooted to be cleared away by a mere statement of its falsity. The matter must be explained in a logical way and authorities quoted, if any impression is to be made.

Among these erroneous ideas, some of the most widely accepted are: that a clean tooth never decays; that the best reading light falls over the left shoulder; that night air is unhealthful; that a "nervous breakdown" is caused by overwork; that whiskey will cure the bites of poisonous snakes; that powdered glass is a poison; and many others.

Dr. Thomen has performed a real service by gathering together in one book 185 of these false ideas, analyzing and correcting them and quoting adequate authority for his explanations or expositions.

His style is so simple, direct and clear that any high school student can understand what he is driving at, but sufficiently full and scientific to satisfy those who have had a scientific training. The extensive table of contents and index render reference easy.

There is scarcely a physician who cannot profitably use this book every day, in connection with the progressive education of his patients, which is a part of his professional duty; and he can render an additional service by advising his more intelligent friends to purchase and study it.

Berglund *et al:* The Kidney

THE KIDNEY IN HEALTH AND DISEASE. In Contributions by Eminent Authorities. *Edited by Hilding Berglund, M.D., Stockholm, Sweden, Formerly Chief of the Department of Medicine at the University of Minnesota, Minneapolis, Minn.; and Grace Medes, Ph.D., Research Biochemist in the Lankenau Hospital Research Institute, Philadelphia, Pa.; with the collaboration of G. Carl Huber, M.D., Professor of Anatomy and Director of Anatomical Laboratories and Dean of the Graduate School of the University of Michigan, Ann Arbor, Mich.; Warfield T. Longcope, M.D., Professor of Medicine in the Johns Hopkins University, Baltimore, Md.; Alfred N. Richards, Ph.D., M.D., Professor of Pharmacology, in the University of Pennsylvania, Philadelphia, Pa. Illustrated with 163 engravings. Philadelphia: Lea & Febiger. 1935. Price, $10.00.*

This volume presents an exhaustive and erudite symposium on the anatomy, physiology and pathology of the kidney, by forty-one distinguished contributors, and it seems probable that no one organ of the body has ever been considered in a more elaborate manner.

Specialists in internal medicine, especially those who devote all or most of their time and energy to the study and treatment of diseases of the kidneys, will find this book extremely valuable. It is rather more detailed and technical than is necessary to meet the needs of the general clinician and medical student.

Ross & Fairlie: Anesthetics

HANDBOOK OF ANESTHETICS. *By J. Stuart Ross, M.B., Ch.B., F.R.C.S.E., Late Lecturer in Practical Anesthetics, University of Edinburgh, and H. P. Fairlie, M.D., Anesthetist to the Western Infirmary, the Royal Hospital for Sick Children and the Dental Hospital, Glasgow. With a Chapter upon Local Anesthesia by W. Quarry Wood, M.D., F.R.C.S.E., Assistant Surgeon, Edinburgh Royal Infirmary. Fourth Edition. Baltimore: William Wood & Company. 1935. Price, $4.00.*

Every physician needs to know about anesthetics, whether he gives them himself

(as most general clinicians have to do occasionally) or depends upon them for doing surgical work.

This relatively small, well-bound and well-printed volume, will give, to all but specializing anesthetists, all that is necessary to be known about the subject for practical purposes. The economy of words in which a great deal of essential information is presented, is truly surprising. The general clinician will be especially pleased with its compactness and arrangement.

Not only are the inhalation anesthetics discussed, but also spinal, regional and local anesthesia and the various barbituric acid derivatives and other substances for parenteral and rectal use as basal or primary anesthetics. The Gwathmey oil-ether method for obstetric analgesia is given in detail. The index is adequate.

Look for FACTS AND COMMENTS among the advertising pages at the back.

Cameron & Gilmour: Biochemistry In Medicine

THE BIOCHEMISTRY OF MEDICINE. *By A. T. Cameron, M.A., D.Sc., F.I.S., F.R.C.S., Professor of Biochemistry, Faculty of Medicine, University of Manitoba; Biochemist, Winnipeg General Hospital, and C. R. Gilmour, M.D., C.M., F.R.C.P.(C.), Professor of Medicine, University of Manitoba; Physician, Winnipeg General Hospital. 31 Illustrations. Baltimore: William Wood & Company. 1933. Price, $6.00.*

The science of physiology is going deeper and deeper into biochemistry; and as the older physicians had little or no formal instruction in this latter science, and the younger ones have not been taught much about how to apply it in clinical practice, a book like this is timely and helpful, in view of the fact that the current literature of medicine contains an increasing number of papers dealing with biochemical problems.

This volume has been made as practical as possible for the studious clinician. Graphic formulas and purely chemical matters are relegated to footnotes, so as not to encumber the text.

Here one will find illuminating discussions of such timely and pertinent subjects as the acid-base balance; kidney function tests; liver function tests; dehydration; sugar tolerance tests; the chemistry of the endocrine secretions and the vitamins; and many other matters about which every physician ought to know more than he does.

The bibliographies, while not exhaustive, are ample for the purpose, and the index is adequate.

Every physician who aspires to be well posted in his profession needs a book like this, and this volume serves the purpose excellently and is heartily recommended.

Lake: Verses of Love and Philosophy

EROS AND THE SAGE. *By George Burt Lake, author of "An Apostle of Joy" and "Hilltops." Highwood, Ill.: Northshore Publishers. 1935. Price, $1.00.*

The first attribute of "Eros and the Sage" which impresses the reader is its vitality. Whether he agree or disagree with the philosophies of these poems, he cannot help but sense their feeling of life. They brim with zest for living's manifold experiences, and the reader will recognize at once the authenticity of impulse back of the work. These poems are no mere mental achievement; they are part and parcel of the poet. They have that quality of sincerity and integrity which so many more pretentious books of verse today unfortunately lack.

Dr. Lake has a true sense of rhythm and has mastered a variety of verse patterns. Added to this, he has a nice feeling for poetic epigramme, as:

> "For memory is a sorry food
> To him who's tasted bliss."
>
> * * *
>
> "'Your love is wise; my wisdom love,' he said."

There is, perhaps, an over-exuberance in some of the verses; a poem here and there might be "tightened" and emerge stronger for the shortening. But these flaws do not mar the reader's pleasure and are inconsequential compared with the virtues of this little volume.

ADELAIDE LOVE.

Diseases of the Heart Muscle

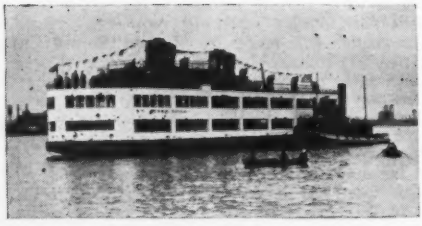
KLINIK DER ERKRANKUNGEN DES HERZMUSKELS. (Clinic of the Diseases of the Heart Muscle.) Tenth Post-Graduate Course held in Bad Nauheim. *Edited by the Society of Physicians of Bad Nauheim. 170 pages with 63 illustrations. Leipsic: Theodor Steinkopf. 1934. Price, 10 Marks.*

This small volume is the outcome of post-graduate courses given by outstanding specialists in Germany, including one in Prague. Each lecturer has contributed an excellent discourse. Among the subjects and their authors are: Anatomy of the Heart Muscle (Becher, of Giessen); Non-vascular Damage of the Heart Muscle (Aschoff, of Freiburg); Heart Muscle Damage by Coronary Insufficiency (Buchner, of Berlin); Clinical Electrocardiography of the Damaged Myocardium (Weber, of Bad Nauheim); Clinical Picture of the Diseases of the Heart Muscle (Krehl, of Heidelberg); Therapy of Non-Compensated Diseases of the Heart Muscle (Lange, of Munich); and a number of others.

The value of the monograph is evident from the list of subjects and their authoritative lectures. The illustrations are splendid, as is the mechanical make-up of the book. An index is conspicuous by its absence.

G. M. B.

MEDICAL NEWS



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Ship for Sick Folks

HERE is a picture of the new "hospital ship" (which appears to have no or little real hospital equipment), which has recently been launched by St. John's Guild, New York City. It is said to be unsinkable, having three electrically welded decks, will accommodate 1,500 convalescent invalids and is intended for taking such people on cruises, so that they can get the benefits of sun and air.

American Public Health Association

THE sixty-fourth annual meeting of the American Public Health Association will be held at Milwaukee, Wis., October 7 to 10, inclusive, 1935. An excellent program and health exhibit have been planned. All city and county health officers and others interested in public health work should make a serious effort to be present. Write for details to Willimina R. Walsh, 50 W. 50th St., New York, N. Y.

Cevitamic Acid and Cebione

ACCORDING to a note in the January 12, 1935, issue of the *J.A.M.A.*, "Cevitamic Acid" is a non-proprietary designation adopted by the Council on Pharmacy and Chemistry for the crystalline vitamin C, which was recently introduced as ascorbic acid (see CLIN. MED. & SURG., Aug., 1934, page 368). The name ascorbic acid was not acceptable to the Council, "because of its rules against therapeutically suggestive names."

The proprietary name "Cebione," submitted by Merck & Co., Inc., for its preparation of the crystalline vitamin C isolated by Szent-Gyorgyi, was recognized by the Council "in recognition of the discoverer and of the service of the firm in making the product available for therapeutic use."

Interstate Postgraduate Medical Association

THIS is a preliminary warning to all physicians who are eager to keep up with the procession and to get the most possible instruction with the least financial outlay, that the International Assembly of the I. P. G. M. A. will be held in the interesting city of Detroit, Mich., October 14 to 18, inclusive, 1935. A long list of famous teachers will be there and there will be something worth while for everybody. Begin making plans now and write to Dr. Wm. B. Peck, Freeport, Ill., for a preliminary program.

Adopting Children

IF a pair of childless people want to adopt a child, the matter is, today, by no means a simple one, for most states have passed laws whose purpose is to see that the foster parents discharge their duties properly. In order that the vital statistics records may be kept straight, some states require that notices of all adoptions be sent to the registrar, so that changes of names may be entered on the birth records.

As many people consult their family doctors when considering the adoption of a child, it would be well for all physicians to familiarize themselves with the adoption laws in their various states, so that they can give advice promptly and intelligently.

Vitamin A and Malt

MUCH of what we know about diet and food values has been obtained through biologic research. Vitamin assays are conducted by feeding the materials under test to albino rats, pigeons or guinea pigs and determining the amount of that food or material which will accomplish certain results in the living animal. It was work of this kind which led to the discovery, in one of our large eastern universities, that the vitamin A value of cod-liver oil could be enhanced two-fold when the oil was fed in the form of maltine with cod-liver oil. This important finding has opened up other avenues of research which, when completed, should add further data to our fund of knowledge regarding vitamins.

SEND FOR THIS LITERATURE

TO ASSIST doctors in obtaining current literature published by manufacturers of equipment, pharmaceuticals, physicians' supplies, foods, etc., CLINICAL MEDICINE AND SURGERY, Waukegan, Ill., will gladly forward requests for such catalogs, booklets, reprints, etc., as are listed from month to month in this department. Some of the material now available in printed form is shown below, each piece being given a key number. For convenience in ordering, our readers may use these numbers and simply send requests to this magazine. Our aim is to recommend only current literature which meets the standards of this journal as to reliability and adaptability for physician's use.

Both the literature listed below and the service are free. In addition to this, we will gladly furnish such other information as you may desire regarding additional equipment, or medicinal supplies. **Make use of this department. Ask for clinical samples where these are offered.**

J-47 Campho-Phenique in Major and Minor Surgery. Campho-Phenique Company.

J-596 The Pneumonic Lung. Its Physical Signs and Pathology. The Denver Chemical Mfg. Co.

J-610 Bischoff Pharmaceutical Specialties. Ernst Bischoff Co., Inc.

J-611 Vera-Perles of Sandalwood Compound. The Paul Plessner Co.

J-612 Taurocol. The Paul Plessner Co.

J-613 Specific Urethritis — Gonosan "Riedel." Riedel & Co., Inc.

J-636 Science's latest contribution to female sex hormone therapy — Progynon. Schering Corporation.

J-642 Ergoapiol (Smith) and Glykeron—(for sample, send narcotic registry number). Martin H. Smith Co.

J-669 The Illinois Post Graduate Medical School Bulletin. The Illinois Post Graduate Medical School, Inc.

J-672 Inflammation and Congestion. Numotizine, Inc.

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J-837 Abbott's Tuniver Oil. Abbott Laboratories.

J-838 What Constitutes an Ideal Urinary Antiseptic? Cobbe Pharmaceutical Co.

J-840 The Treatment of Lobar Pneumonia. National Drug Co.

J-841 Calcium. An Epitome of Recent Researchers in its Therapy. Crookes Laboratories, Inc.

J-842 Parenteral Therapy of Sulphur. Loeser Laboratory.

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J-846 Prophenal; Hypnotic, Sedative, and Anti-spasmodic. Zemmer Co.

J-848 Diagnosis of Genito-Urinary Diseases and Urinalysis. (Berger.) Od Peacock Sultan Co., St. Louis, Mo.

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